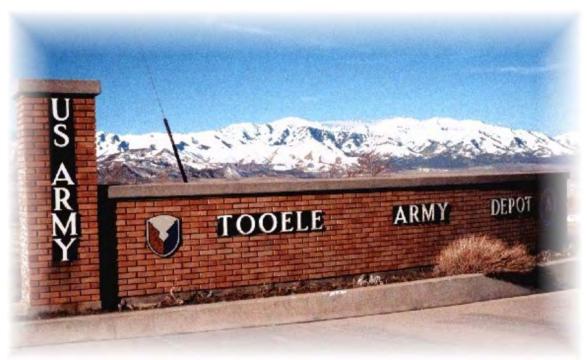
## SEMIANNUAL GROUNDWATER QUALITY REPORT AND VOLUNTARY SWMU SAMPLING SPRING 2005

Tooele Army Depot Tooele, Utah



**Draft Final** 

Volume 2 of 2

Prepared by:



U. S. Army Corps of Engineers Sacramento District Prepared for:



Tooele Army Depot Tooele, Utah October 2005

## VOLUME 2: GROUNDWATER TREATMENT SYSTEM OPERATION AND MAINTAINCE REPORT

## **SPRING 2005**

## TOOELE ARMY DEPOT, UTAH



October 2005

## TABLE OF CONTENTS

				PAGE
1.0	INT	RODU	CTION	1-1
	1.1	Backg	round	1-1
	1.2	Scope	of Operation and Maintenance Activities	1-1
	1.3		ment Organization	1-2
2.0	SYS	TEM N	ION-OPERATION TEST SUMMARY	2-1
3.0	GRO	DUNDV	VATER TREATMENT PLANT OPERATIONS	3-1
	3.1	GWTI	P, Extraction, and Injection Well Downtime	3-2
	3.2	GWTI	P, Extraction Well, and Injection Well Flow	3-3
	3.3	Opera	tion and Maintenance Activities	3-4
		3.3.1	Preventative Maintenance	3-4
		3.3.2	Corrective Maintenance	3-7
		3.3.3	<i>C</i> , <i>y</i>	3-7
		3.3.4	1 ' ' '	
			Stripper Tower, and Plant Facility O&M	3-9
	3.4	Sampl	ing Activities	3-10
4.0	HEA	ALTH A	AND SAFETY	4-1
REF	ERE	NCES		R-1
			LIST OF APPENDICES	
	END		Monthly Operating and Maintenance Reports	
	END		Weekly Extraction Well Monitoring	
	END		Weekly Injection Well Monitoring	
	END END		Pump P-1 Removal Photographs Pump P-2 Intake Valve Repair Photographs	
AFF	END.	IAE	1 ump 1-2 make varve kepan filolographs	

## TABLE OF CONTENTS

(continued)

## LIST OF TABLES

(Tables follow their respective sections)

<b>TABLE</b>	
NO.	TITLE
3-1	Groundwater Treatment Plant Downtime
3-2	Extraction Well Downtime
3-3	Injection Well Downtime
3-4	Groundwater Treatment Plant Total Gallons Treated
3-5	Extraction Well Total Gallons Pumped
3-6	Injection Well Total Gallons Injected
3-7	Orthophosphate Field Test Results: Effluent

### LIST OF ACRONYMS

ATV all-terrain vehicle

CESPK U.S. Army Corps of Engineers, Sacramento District

GWTP Groundwater Treatment Plant

IWL Industrial Waste Lagoon

MWH Americas, Inc.

NOT Non-Operation Test

O&M operation and maintenance

PRAC Pre-placed Remedial Action Contract

RCRA Resource Conservation and Recovery Act

SOW scope of work

SWMU Solid Waste Management Unit

TEAD Tooele Army Depot

USHWCB Utah Solid and Hazardous Waste Control Board

VFD variable frequency drive

#### 1.0 INTRODUCTION

**1.0.0.1.** This report presents a summary of operation and maintenance (O&M) activities performed during the period of 2 January 2005 through 30 June 2005 at the Tooele Army Depot (TEAD) Solid Waste Management Unit (SWMU) 2/Industrial Waste Lagoon (IWL) Groundwater Treatment Plant (GWTP) by Veolia Water North American Operating Services, Inc (Veolia) with oversight and program management by MWH Americas, Inc. (MWH). The work summarized in this report was performed pursuant to the U.S. Army Corps of Engineers, Sacramento District (CESPK), Scope of Work (SOW) dated 5 September 2003 (revised 6 August 2004), and was performed under the Preplaced Remedial Action Contract (PRAC) No. DACA05-99-D-0012, Task Order No. CM22.

#### 1.1 BACKGROUND

**1.1.0.1.** The Utah Solid and Hazardous Waste Control Board (USHWCB) has issued TEAD a Resource Conservation and Recovery Act (RCRA) Post Closure Permit for post-closure and corrective action of the IWL and other SWMUs, hereafter referred to as the Permit (USHWCB, 2001). The O&M activities described in this summary report were conducted in accordance with Attachment Number 8 (The Preventative Maintenance Schedule) of the Permit.

#### 1.2 SCOPE OF OPERATION AND MAINTENANCE ACTIVITIES

**1.2.0.1.** The operation activities include the following tasks:

- Operations and monitoring of the GWTP and extraction well shutdown during the System Non-Operation Test (System NOT)
- Operation and monitoring of two air stripping towers and associated instrumentation

1-1

TEAD SWMU 2/IWL

- Operation and monitoring of three air stripping tower feed pumps (i.e., P-1, P-2, and P-3) and associated instrumentation
- Operation and monitoring of one recycle pump (i.e., P-4) and associated instrumentation
- Operation and monitoring of 16 extraction wells [i.e., E-01, -02-1, -02-2, -03-1, -03-2, -04, -05, -06, -08, -09, -10, -11, -12, -13, -14, and -15] and associated instrumentation
- Operation and monitoring of 13 injection wells (i.e., I-1 through I-13) and associated instrumentation
- Operation and monitoring of all piping associated with the GWTP.

### **1.2.0.2.** The maintenance activities included the following tasks:

- Daily, weekly, monthly, quarterly, and annual preventative maintenance
- Corrective maintenance of all treatment equipment, piping, and instrumentation.

### 1.3 DOCUMENT ORGANIZATION

## **1.3.0.1.** The remainder of this report consists of:

- Section 2.0 System Non-Operation Test Summary. Describes the System NOT and the procedures followed at the GWTP
- Section 3.0 Groundwater Treatment Plant Operation. Presents a summary
  of the O&M activities conducted during the reporting period. Included as part
  of this section are tables detailing downtime for the plant, the extraction wells,
  and the injection wells, and total volumes of groundwater pumped from each

TEAD SWMU 2/IWL

extraction well, treated at the GWTP, and injected at the individual injection wells.

- Section 4.0 Health and Safety. Presents a brief summary of health and safety issues for the reporting period.
- Appendix A Monthly Operating and Maintenance Reports
- Appendix B Weekly Extraction Well Monitoring
- Appendix C Weekly Injection Well Monitoring
- Appendix D Pump P-1 Removal Photographs
- Appendix E Pump P-2 Intake Valve Repair Photographs

TEAD SWMU 2/IWL

#### 2.0 SYSTEM NON-OPERATION TEST SUMMARY

**2.0.0.1.** The System NOT was designed to assess how the GWTP controls the groundwater plume by limiting the spatial extent of the plume and reducing the levels of contamination. The System NOT included short term monitoring of groundwater rebound as a result of the shut-down of the extraction wells, which occurred in two phases. Phase I was conducted between 22 June 2004 and 6 August 2004 and Phase II was conducted between 10 August 2004 and 24 September 2004. Over the longer term, contaminant concentrations will be monitored for statistically significant changes. Details of the System Non-Operation Test are available in the *Final System Non-Operation Test Proposal, Implementation of Alternative Measures, Industrial Waste Lagoon* (URS, 2003) and in the *SWMU 2/Industrial Waste Lagoon System Non-Operation Test Monitoring and Installation-Wide Groundwater Monitoring Plans* (MWH, 2004). The CESPK is currently evaluating the results of the ongoing System NOT.

**2.0.0.2.** Phase I included the shut down of five extraction wells that are screened in the bedrock (i.e., E-04, -05, -08, -09 and -10) and water level elevations were monitored in these extraction wells and in 44 monitoring wells for a period of 45 days as the aquifer rebounded. Phase II consisted of the shut down of 10 extraction wells screened in alluvium (i.e., E-01, -02-1, -02-2, -03-1, -03-2, -06, -11, -13, -14, and -15). Water level rebound was monitored for a period of 45 days in these extraction wells, the Phase I extraction wells, and in 34 monitoring wells. In addition, manual measurements were collected weekly from 22 monitoring wells. During both phases, water level elevations were measured with downhole transducers/dataloggers (i.e., In-Situ Inc miniTROLLs<sup>TM</sup> and TROLLS<sup>TM</sup>) in the extraction wells and in the associated monitoring wells and piezometers. During the second phase of the shutdown test, water elevations were measured manually using an electric water-level indicator at select monitoring wells and piezometers to supplement the data collected using the downhole transducers/dataloggers.

**2.0.0.3.** During Phase I of the System NOT, the GWTP operated at a reduced capacity to treat the water produced by the extraction wells screened in the alluvium that continued

TEAD SWMU 2/IWL

to operate. During Phase II of the System NOT, the GWTP operated in recirculation mode to prevent fouling of the packing material in the air stripping towers. Because of loss of water due to evaporation and leakage to the injection wells that takes place during recirculation mode, replacement water was required for continuation of plant operation in recirculation mode. Therefore, prior to the completion of Phase II of the System NOT extraction well E-13 was pumped to obtain replacement water. Approximately 6,000 gallons were pumped on 13 September and again on 20 September 2004. In addition, E-13 was pumped periodically during the remainder of the reporting period. Extraction well E-13 was chosen as the source of replacement water by representatives of CESPK as it was determined that E-13 would have the least impact on the System NOT. The GWTP will continue to operate in recirculation mode and extraction well E-13 will continue to be the source for replacement water.

TEAD SWMU 2/IWL

3.0 GROUNDWATER TREATMENT PLANT OPERATIONS

**3.0.0.1.** During the time period of 2 January to 30 June 2005, over 9 million gallons of

contaminated groundwater was treated at the GWTP. More than 29 billion gallons of

contaminated groundwater have been treated at the GWTP since the inception of GWTP

operations in 1993. During this reporting period the treatment plant has recorded

approximately 500 hours of down time, the majority of which is a result of power

fluctuations and corrective maintenance activities. During the reporting period, the

extraction and injection well system has been operating within its design parameters.

3.0.0.2. The GWTP is operated by staff from Veolia with oversight by MWH. Veolia

personnel are Steve Kubacki project manager, Jeff Hanmann, and Mark Baer. MWH

personnel include Dave Imlay O&M supervisor, Chris Goodrich O&M Manager and

Mike Gronseth Technical Team Leader for the O&M and MWH Task Order Manager.

Correspondence was maintained with Larry McFarland and Carl Cole of the TEAD

environmental management group. Monthly O&M reports were prepared by Veolia and

submitted to CESPK.

**3.0.0.3.** Veolia maintained records of daily events and pertinent operational data in a

bound logbook and on daily process control sheets. In addition, monitoring and

inspection logbooks were used to compile pertinent operational data such as: water

levels, volume of water pumped, instantaneous flow rates, average flow rates, pressure

gauge reading and time for the GWTP including data on the extraction and injection

wells. Process control data sheets were developed to compile operational data including

surge tank level, instantaneous flow, total flow, pump discharge pressure, stripper wet

level, air flow, air blower, discharge pressure, and air temperature. All documentation is

available for review at the GWTP.

**3.0.0.4.** GWTP, extraction well, and injection well downtime is summarized in

Tables 3-1 through 3-3, respectively. Total gallons processed at the GWTP and total

gallons pumped at extraction well and at injection wells are presented in Tables 3-4

TEAD SWMU 2/IWL

Contractor: MWH

3-1

through 3-6, respectively. Orthophosphate monitoring from the GWTP effluent is summarized in Table 3-7.

**3.0.0.5.** Because of the System NOT, the groundwater treatment plant operated in recirculation mode for most of the reporting period and will continue to do so for the remainder of the System NOT, projected until 2007. Periodic pumping of the extraction wells and exercise of the GWTP equipment was conducted during the System NOT. Seven extraction wells (i.e., E-3-1, 3-2, -4, -5, -6, -8, and -10) were pumped between 07 and 11 February 2005. The remaining extraction wells (i.e., E-1, -2-1, -2-2, -11, -13, -14, and -15) were pumped between 09 and 13 May 2005. In addition to the periodic pumping of the Phase I and II extraction wells, extraction well E-13 was pumped several times during the reporting period in order to obtain replacement water for the GWTP. Due to evaporation and leakage that occurs during recirculation mode, replacement water was necessary to maintain a water supply for recirculation.

## 3.1 GWTP, EXTRACTION, AND INJECTION WELL DOWNTIME

**3.1.0.1. Groundwater Treatment Plant Downtime.** GWTP downtime is defined as the accumulative hours that water is not being directed through the air strippers. During the six month time period between 2 January to 30 June 2005, the GWTP was down for 484 hours. The majority of the plant downtime (approximately 380 hours) was associated with corrective maintenance activities and an operational test to determine how quickly the GWTP can be drained of water. The remaining downtime resulted from the System NOT, power outages and power fluctuations. A summary of GWTP downtime is summarized in Table 3-1.

**3.1.0.2. Extraction Well Downtime.** A summary of the extraction well downtime for the reporting period is summarized in Table 3-2. All of the extraction well downtime was due to the System NOT. Other causes of extraction well downtime included power outages, power fluctuations, and preventative/corrective maintenance activities. It should be noted that extraction well E-12 is off-line except during sampling events because it is located beyond the leading edge of the groundwater plume and extraction well E-9 has

TEAD SWMU 2/IWL

been off-line for all of this reporting period. In late 2002, during installation of the internal cathodic protection system in extraction well E-9 the casing and screen were discovered to be corroded (i.e., breaks and holes were noted at several depths). Discussions between the USACE and Veolia in 2003 resulted in the decision to delay repair on extraction well E-9 pending results of the System NOT.

**3.1.0.3. Injection Well Downtime.** Injection well downtime for the reporting period is summarized in Table 3-3. The majority of injection well downtime was due to the System NOT. Other causes of injection well downtime included power outages, power fluctuations, and preventative/corrective maintenance activities.

### 3.2 GWTP, EXTRACTION WELL, AND INJECTION WELL FLOW

**3.2.0.1. GWTP Flow.** The GWTP is equipped with two flow meters and totalizers accurate to  $\pm$  2.0%. The GWTP processed approximately 9 million gallons of contaminated groundwater during the reporting period. A summary of GWTP flow is presented in Table 3-4.

**3.2.0.2. Extraction Well Flow.** The extraction wells are monitored weekly for water level, total flow, well pumping pressure, date and time. Each extraction well is equipped with a flow meter and totalizer accurate to  $\pm$  2.0%. The total gallons pumped and the average flow for the week are calculated and recorded. The extraction wells produced approximately 9 million gallons during this reporting period. A summary of the extraction well flow is presented in Table 3-5 and weekly extraction well monitoring data are presented in Appendix A.

**3.2.0.3. Injection Well Flow.** The injection wells are monitored weekly for water level, total flow, well pumping pressure, date and time. Each injection well is equipped with a flow meter and totalizer accurate to  $\pm$  2.0%. The total gallons injected and the average flow for the week are calculated and recorded. The injection wells accepted approximately 8.2 million gallons during this reporting period. A summary of the extraction well flow is presented in Table 3-6 and weekly extraction well monitoring data are presented in Appendix B.

TEAD SWMU 2/IWL

**3.2.0.4.** The discrepancy in total gallons pumped (approximately 9 million gallons),

treated (approximately 9 million gallons), and injected (approximately 8.2 million

gallons) during the reporting period results from several factors including; the accuracy

 $(\pm 2\%)$  of the flow meters (16 extraction well, 13 injection well and two located at the

treatment plant) and water loss due to leakage and evaporation.

3.3 OPERATION AND MAINTENANCE ACTIVITIES

**3.3.0.1.** During this reporting period, O&M activities included preventative and

corrective maintenance on equipment and structures, including pumps, motors,

instrumentation, flow-meters, electrical equipment, power lines, valves and associated

piping. Personnel maintained records of all maintenance in bound notebooks and

presented summaries in monthly summary reports. In addition to the preventative and

corrective maintenance, daily, weekly, monthly, semi-annual, and annual checklists were

completed, which are available for review at the GWTP.

3.3.1 Preventative Maintenance

**3.3.1.1.** Preventative maintenance activities were followed at the GWTP as outlined in

the Preventative Maintenance Schedule. In addition, periodic inspections and

observations of the IWL were documented. There were no unusual observations

recorded or observed. The following preventative maintenance activities were performed

and recorded on a regular basis.

3.3.1.2. Daily Preventative Maintenance.

• Stripper feeder pumps: pump in operation, pump run hours, check mechanical

seals for leaks, check valves and associated pipes for leaks, check seal water

flush, and record pump bearing and motor temperature

• Hydro pneumatic system: check pressure, check operation for abnormal noise

or vibration, and check water level in reservoir

TEAD SWMU 2/IWL

• Containment basins: visual check for water, check surge tank, stripping towers, valves, and piping for leaks, check operation of sump pumps, check for debris, and check for frozen water in cold weather

• Plant alarm system: verify dry contact operation, verify auto dialer operation, and check emergency lighting.

## 3.3.1.3. Weekly Preventative Maintenance.

• IWL patrol: security fence integrity, wildlife preserve, and unusual odors

• Stripper feeder pumps: pump in operation, check for abnormal noise or vibration, check for mechanical seal leaks, and general visual check

• Stripper air blowers: blower in operation, check belts for wear and tension, check filters for obstructions, and check for abnormal noise or vibration

• Truck and all-terrain vehicle (ATV) inspection: general maintenance

• Extraction wells: check well vaults for wildlife, leaks in piping, instrumentation operation, secured cover, unusual odors, foreign debris, electrical panels, SCADA antenna, electrical lines and conduit, and wet spots

 Injection wells: check well vaults for wildlife, leaks in piping, instrumentation operation, secured cover, unusual odors, foreign debris, electrical panels, SCADA antenna, electrical lines and conduit, and wet spots.

## 3.3.1.4. Monthly Preventative Maintenance.

• IWL patrol: abnormal erosion, cover settlement, and vegetation cover

• Stripper feeder pumps: switch off line pump to on line (each tower), record run hours, check mechanical seals for leaks, check seal water, check valves

TEAD SWMU 2/IWL

and associated piping for leaks, record bearing temperatures, and lubricate bearings

• Stripper air blowers: switch off line blower to on line (each tower), check off line blower belts for tension, wear, and alignment, and record run hours

• Check on line blower for abnormal noise and vibration, record bearing temperature, and lubricate bearings

• Extraction well VFD cabinets: check for abnormal noise and vibration, check air conditioning filters for debris, and check cabinet for condensation.

## 3.3.1.5. Quarterly Preventative Maintenance.

• IWL patrol: check security fence, wildlife, unusual odors, erosion, cover settlement, vegetation cover, cover drainage, and run on and run off

• Stripper feeder pumps: observe and record amp draws (each line)

• Stripper air blowers: observe and record amp draws (each line)

• Extraction well motors: observe and record amp draws (each line).

## 3.3.1.6. Annual Preventative Maintenance.

• IWL patrol: check security fence, wildlife, unusual odors, erosion, cover settlement, vegetation cover, cover drainage, and run on and run off

• Stripper feeder pumps: observe and record amp draws (each line), megger motor leads (if indicated), and lubricate motor leads (if indicated)

TEAD SWMU 2/IWL

Stripper air blowers: observe and record amp draws (each line), megger

motor leads (if indicated), and lubricate motor leads (if indicated)

Stripping towers: observe packing condition.

3.3.2 Corrective Maintenance

**3.3.2.1.** Corrective maintenance consists of major and minor non-routine maintenance.

During this reporting period, corrective maintenance was performed on equipment at

monitoring, extraction, and injection wells, and on equipment at the GWTP. O&M

activities that took place at monitoring, extraction, and injection wells are summarized in

Section 3.3.3. This is followed by a summary of O&M activities at transfer and

recirculation pumps, blowers, storage tanks, stripper tower, and the plant facility in

Section 3.3.4.

3.3.3 Monitoring, Extraction, and Injection Well O&M Activities

3.3.3.1. O&M Activities at Monitoring Wells.

No O&M activities were completed on the monitoring wells during the

reporting period.

3.3.3.2. O&M activities at Extraction Wells.

All wells: flow-meter calibration

E-1: Low level conduit was repaired

E-2-1: Replaced circuit board in variable frequency drive

E-2-2: None

E-3-1: None

TEAD SWMU 2/IWL

Contractor: MWH

3-7

- E-3-2: Repaired low level wiring connection damaged by cattle
- E-4: Installed new pressure transmitter and pressure transmitter card in the flow meter
- E-5: Rebuilt propeller base assembly
- E-6: Re-attachment of loose insulation in well vault
- E-8: Uncovered buried isolation valve
- E-9: Repaired low level wiring connection damaged by cattle
- E-10: Re-attachment of loose insulation in well vault
- E-11: None
- E-12: None
- E-13: New low level conduit installed
- E-14: Repaired wiring for low level probe
- E-15: None.

## 3.3.3.3. O&M Activities at Injection Wells.

• All wells: flow-meter calibration; clearing of tumbleweed from well enclosures

3-8

- I-1: None
- I-2: None

- I-3: None
- I-4: None
- I-5: None
- I-6: None
- I-7: None
- I-8: None
- I-9: Telemetry repairs
- I-10: None
- I-11: None
- I-12: Re-attachment of loose insulation in well vault
- I-13: None.

## 3.3.4 Transfer and Recirculation Pumps, Blowers, Storage Tanks, Stripper Tower, and Plant Facility O&M

## 3.3.4.1. Transfer Pumps.

- P-1: Painted intake and discharge isolation valves, replace flow switch; Nickerson Company removed pump for disassembly and repair on 03 May 2005. Photographs of the pump removal are included in Appendix D. The pump was re-installed on 26 July 2005.
- P-2: Painted intake and discharge isolation valves, replaced flow switch, new packing gland bolts were installed on discharge isolation valve, intake valve

3-9

was removed and replaced. Photos of the valve removal are included in

Appendix E.

• P-3: Painted intake and discharge isolation valves, replaced flow switch,

painted intake isolation valve, new packing gland bolts installed on intake

isolation valve,

3.3.4.2. Recirculation Pumps

• P-4: Painted intake and discharge isolation valves.

3.3.4.3. Blowers.

• B-1: Adjusted belts

• B-2: Adjusted belts

• B-3: None.

3.3.4.4. Storage Tanks and Stripper.

• Surge Tank: None

• Stripper: None.

3.3.4.5. Plant Facility and Roadways. General operation and maintenance performed

at the GWTP included electrical lighting repair, painting of the facility, and site

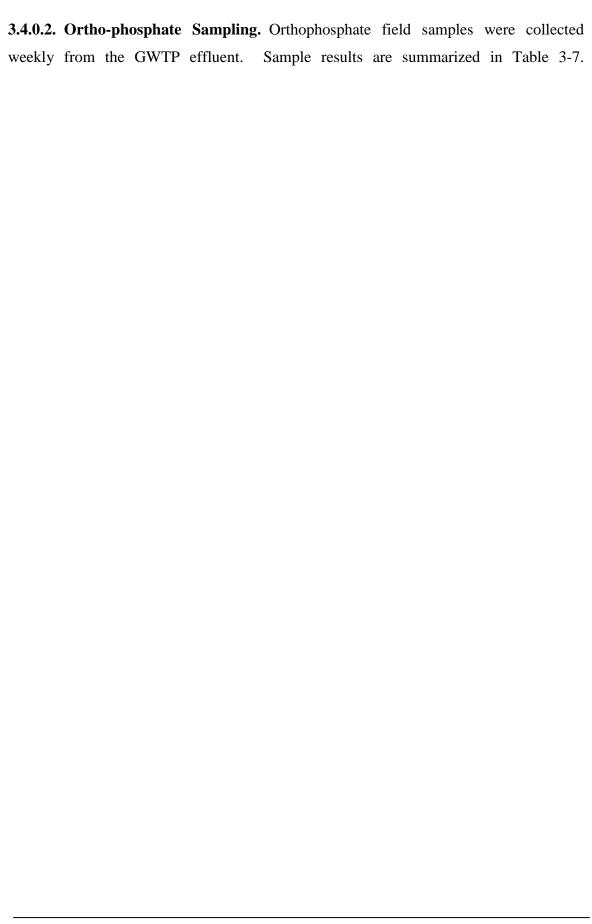
maintenance (i.e., snow removal, road repair, mowing, trimming, etc.).

3.4 SAMPLING ACTIVITIES

**3.4.0.1. Groundwater Sampling.** Sampling activities are discussed in Volume I of the

Spring 2005 Monitoring Report.

TEAD SWMU 2/IWL



TEAD SWMU 2/IWL Contractor: MWH

TABLE 3-1
GROUNDWATER TREATMENT PLANT DOWNTIME

Time Period in 2005	Total Downtime (hours)	Reason
January	13	Power Fluctuations
February	100	Power Fluctuations and Corrective Maintenance
March	3	Power Fluctuations
April	10	Power Fluctuations
May	282	Corrective Maintenance
June	76	Sub-station work by TEAD base utilities
Total	484	

NOT Non-Operation Test

TABLE 3-2

EXTRACTION WELL DOWNTIME
PERIOD: January Through June 2005

Extraction Well	Total Downtime (hours)	Power Fluctuation (hours)	Maintenance* (hours)	System NOT (hours)
E-1	4,078	0	0	4,078
E-2-1	4,081	0	0	4,081
E-2-2	4,080	0	0	4,080
E-3-1	4,080	0	0	4,080
E-3-2	4,079	0	0	4,079
E-4	4,078	0	0	4,078
E-5	4,080	0	0	4,080
E-6	4,080	0	0	4,080
E-8	4,080	0	0	4,080
E-9				
E-10	4,077	0	0	4,077
E-11	4,079	0	0	4,079
E-12				
E-13	4,067	0	0	4,067
E-14	4,079	0	0	4,079
E-15	4,080	0	0	4,080
	57,099	0	0	57,099

NOT Non-Operation Test

-- off-line

\* preventative and corrective maintenance

**TABLE 3-3** INJECTION WELL DOWNTIME PERIOD: January Through June 2005

Injection Well	Total Downtime (hours)	Power Fluctuation (hours)	Maintenance*	System NOT (hours)
I-1	3,815	0	0	3,815
I-2	3,815	0	0	3,815
I-3	3,815	0	0	3,815
I-4	3,815	0	0	3,815
I-5	3,815	0	0	3,815
I-6	3,815	0	0	3,815
I-7	3,815	0	0	3,815
I-8	3,815	0	0	3,815
I-9	3,815	0	0	3,815
I-10	3,815	0	0	3,815
I-11	3,815	0	0	3,815
I-12	3,815	0	0	3,815
I-13	3,815	0	0	3,815
	49,595	0	0	49,595

hrs

hours Non-Operation Test NOT

preventative and corrective maintenance

TABLE 3-4

GROUNDWATER TREATMENT PLANT
TOTAL GALLONS TREATED

Date	Total Flow (gallons)
January 2005	17,800
February 2005	4,595,500
March 2005	12,000
April 2005	22,000
May 2005	4,369,600
June 2005	24,000
Total Gallons Treated	9,040,900

TABLE 3-5
EXTRACTION WELL TOTAL GALLONS PUMPED

Extraction Well	January (gallons)	February (gallons)	March (gallons)	April (gallons)	May (gallons)	June (gallons)	Total (gallons)
E-1	0	0	0	0	665,000	0	665,000
E-2-1	0	0	0	0	583,000	0	583,000
E-2-2	0	0	0	0	626,000	0	626,000
E-3-1	0	561,000	0	0	0	0	561,000
E-3-2	0	689,000	0	0	0	0	689,000
E-4	0	507,000	0	0	0	0	507,000
E-5	0	772,000	0	0	0	0	772,000
E-6	0	596,000	0	0	0	0	596,000
E-8	0	650,000	0	0	0	0	650,000
E-9	0	0	0	0	0	0	0
E-10	0	817,000	0	0	0	0	817,000
E-11	0	0	0	0	566,000	0	566,000
E-12	0	0	0	0	9,000	0	9,000
E-13	12,000	0	12,000	18,000	629,000	24,000	695,000
E-14	0	0	0	0	657,000	0	657,000
E-15	0	0	0	0	628,000	0	628,000
	12,000	4,592,000	12,000	18,000	4,363,000	24,000	9,021,000

TABLE 3-6
INJECTION WELL TOTAL GALLONS INJECTED

Total (gallons)	June (gallons)	May (gallons)	April (gallons)	March (gallons)	February (gallons)	January (gallons)	Extraction Well
(	0	0	0	0	0	0	I-1
(	0	0	0	0	0	0	I-2
(	0	0	0	0	0	0	I-3
(	0	0	0	0	0	0	I-4
196,000	0	1,000	0	0	195,000	0	I-5
(	0	0	0	0	0	0	I-6
1,322,000	0	695,000	0	0	627,000	0	I-7
5,000	0	1,000	0	0	4,000	0	I-8
1,976,000	0	973,000	0	0	1,003,000	0	I-9
4,670,000	0	2,341,000	0	0	2,329,000	0	I-10
(	0	0	0	0	0	0	I-11
(	0	0	0	0	0	0	I-12
(	0	0	0	0	0	0	I-13
8,169,000	0	4,011,000	0	0	4,158,000	0	

## TABLE 3-7 ORTHOPHOSPHATE FIELD TEST RESULTS: EFFLUENT

	TEST ME	ETHOD		TEST METHOD		
5 / 57	HACH	CHEMETRIC	D / 500	HACH	CHEMETRIC	
DATE	(mg/l)	(mg/l)	DATE	(mg/l)	(mg/l)	
JAN 3, 2005	26.0	1.0	MAR 7, 2005	28.0	1.0	
JAN 5, 2005	24.0	1.0	MAR 9, 2005	28.0	1.0	
JAN 7, 2005	25.0	1.0	MAR 11, 2005	28.0	1.0	
JAN 10, 2005	24.0	1.0	MAR 14, 2005	30.0	1.0	
JAN 12, 2005	26.0	1.0	MAR 16, 2005	26.0	1.0	
JAN 14, 2005	23.0	1.0	MAR 18, 2005	26.0	1.0	
JAN 17, 2005	25.0	1.0	MAR 21, 2005	27.0	1.0	
JAN 19, 2005	31.0	2.0	MAR 23, 2005	24.0	1.0	
JAN 21, 2005	32.0	2.0	MAR 25, 2005	25.0	1.0	
JAN 24, 2005	32.0	2.0	MAR 28, 2005	26.0	1.0	
JAN 26, 2005	30.0	2.0	MAR 30, 2005	27.0	1.0	
JAN 28, 2005	31.0	2.0	APR 1, 2005	27.0	1.0	
JAN 31, 2005	33.0	2.0	APR 4, 2005	27.0	1.0	
FEB 2, 2005	30.0	1.0	APR 6, 2005	26.0	1.0	
FEB 4, 2005	32.0	1.0	APR 8, 2005	26.0	1.0	
FEB 8, 2005	14.0	0.8	APR 11, 2005	24.0	1.0	
FEB 9, 2005	12.0	1.5	APR 13, 2005	26.0	1.0	
FEB 11, 2005	13.0	1.5	APR 15, 2005	32.0	1.5	
FEB 14, 2005	18.0	0.9	APR 18, 2005	30.0	1.5	
FEB 16, 2005	22.0	1.0	APR 20, 2005	30.0	1.0	
FEB 18, 2005	23.0	1.0	APR 22, 2005	32.0	1.0	
FEB 21, 2005	25.0	1.0	APR 25, 2005	31.0	1.0	
FEB 23, 2005	25.0	1.0	APR 27, 2005	29.0	1.0	
FEB 25, 2005	27.0	1.0	APR 29, 2005	30.0	1.0	
FEB 28, 2005	27.0	1.0	MAY 2, 2005	32.0	1.0	
MAR 2, 2005	28.0	1.0	MAY 9, 2005	15.0	0.85	
MAR 4, 2005	28.0	1.0	MAY 11, 2005	15.0	0.80	

mg/l milligrams per liter

TABLE 3-7 (Continued)
ORTHOPHOSPHATE FIELD TEST RESULTS: EFFLUENT

	TEST ME	ETHOD		TEST MI	ETHOD
DATE	HACH (mg/l)	CHEMETRIC (mg/l)	DATE	HACH (mg/l)	CHEMETRIC (mg/l)
MAY 13, 2005	14.0	0.80	JUNE 8, 2005	29.0	1.0
MAY 16, 2005	25.0	1.0	JUNE 10, 2005	28.0	1.0
MAY 18, 2005	28.0	1.0	JUNE 13, 2005	29.0	1.0
MAY 20, 2005	30.0	1.0	JUNE 15, 2005	27.0	1.0
MAY 23, 2005	28.0	1.0	JUNE 17, 2005	29.0	1.0
MAY 25, 2005	28.0	1.0	JUNE 20, 2005	30.0	1.0
MAY 27, 2005	29.0	1.0	JUNE 22, 2005	27.0	1.0
JUNE 1, 2005	29.0	1.0	JUNE 24, 2005	29.0	1.0
JUNE 3, 2005	30.0	1.0	JUNE 27, 2005	29.0	1.0
JUNE 6, 2005	30.0	1.0	JUNE 29, 2005	28.0	**

mg/l milligrams per liter
\*\*Unable to conduct test

#### 4.0 HEALTH AND SAFETY

**4.0.0.1. Personnel Training.** All personnel working onsite are required to have documentation of training fulfilling the requirements of OSHA 29 CFR 1910 129(e) (3). Eight-hour refresher is required for each employee per year. In addition, all personnel are required to read the Site Safety and Health Plan. TEAD also requires personnel to attend the annual hazardous waste management course. In addition, employees are given annual physical exams. During the reporting period, Veolia covered the following monthly training topics:

- Hazard communication standard
- Personal protective equipment and respiratory protection
- Fire prevention and fire extinguishers
- Electrical safety and lockout/tagout
- Driving safety/vehicle accident reporting and ATV safety/SOP review
- Heat stress and bloodborne pathogen control

**4.0.0.2.** Lost Time Injuries. No lost time injuries occurred during the reporting period.

4-1

TEAD SWMU 2/IWL

#### REFERENCES

- MWH Americas, Inc., 2004. *Tooele Army Depot, SWMU 2/Industrial Waste Lagoon System Non-Operation Test Monitoring and Installation-Wide Groundwater Monitoring Plans*. Prepared for the U.S. Army Corps of Engineers Sacramento District. Final, June 2004.
- MWH Americas, Inc., 2005. SWMU 2/Industrial Waste Lagoon Groundwater Treatment Plant Influent, Effluent, and Extraction Well Sampling Quarterly Report. Prepared for the U.S. Army Corps of Engineers Sacramento District. Draft, July 2005.
- URS, 2003. Final System Non-Operation Test Proposal, Implementation of Alternative Measures, Industrial Waste Lagoon. Prepared for the U.S. Army Corps of Engineers Sacramento District. Final, October 2003.

SWMU 2/IWL

## APPENDIX A

# MONTHLY OPERATING AND MAINTENANCE REPORTS

January – June 2005

## TOOELE ARMY DEPOT TEAD / GWTP MONTHLY OPERATING REPORT: January 2005

## **INTRODUCTION:**

The Groundwater Treatment Plant (GWTP) is currently operating in the recirculation mode per the System Non Operation Test, water was recirculated for 730 hours and 57 minutes this month.

## **PLANT SAFETY/TRAINING:**

There were no lost time accidents. January's Safety Training Topic was "The Hazard Communication Standard".

#### **PLANT MAINTENANCE:**

All daily, weekly, and monthly preventative maintenance activities were performed including the inspection of the **IWL**. The following preventative and corrective maintenance activities were completed this month.

- Snow removal was completed this month at the treatment plant and access roads.
- Operations personnel pumped and treated 6,000 gallons of makeup water from E-13 on January 4<sup>th</sup>.
- Painted the discharge isolation valves on transfer pumps P-1, P-2 and P-3.
- Painted the intake isolation valve on transfer pump P-3.
- New packing gland bolts were also installed on P-2's discharge isolation valve and P-3's intake isolation valve.
- Operations personnel pumped and treated 6,000 gallons of makeup water from E-13 on January 13<sup>th</sup>.
- Final preparation and painting of the motor control center (MCC) room.
- Operations personnel started clearing the tumbleweeds from the injection well fences.
- Per the TEAD Environmental Office 5,800 gallons of SWMU #58 well development water was received and treated at the treatment plant on January 18<sup>th</sup>.
- Continued preparation of the process area walls for painting.
- The GWTP experienced a power outage on January 25<sup>th</sup>. TEAD base utilities was contacted and replaced 2 power line cutouts. Power was then restored with no further problems.
- Operations personnel pumped and treated 6,000 gallons of makeup water from E-13 on January 25<sup>th</sup>.

# TOOELE ARMY DEPOT TEAD / GWTP MONTHLY OPERATING REPORT: February 2005

## **INTRODUCTION:**

The Groundwater Treatment Plant (GWTP) is currently operating in the recirculation mode per the System Non Operation Test. Water was recirculated for 572 hours and 6 minutes and was treated for 95 hours and 25 minutes this month.

## **PLANT SAFETY/TRAINING:**

There were no lost time accidents. February's Safety Training Topic was "PPE/Respiratory Protection".

## **PLANT MAINTENANCE:**

All daily, weekly, and monthly preventative maintenance activities were performed including the inspection of the **IWL** and general upkeep of the treatment facility. The following preventative and corrective maintenance activities were also completed this month.

- Secured gates with chain on off-depot I-wells and E-12 fences to prevent the cattle from entering and damaging the equipment.
- Operations personnel installed a new transmitter card on the flow meter at extraction well 4.
- A new motor, hydraulic pump and wiring harness were installed on the snow plow.
- Operations personnel adjusted the belts on B-1 and B-2.
- Started the annual update of written safety programs.
- Continued preparation and painting of plant interior.
- Operations personnel installed a new pressure transmitter at extraction well 4.
- Cleaned the T-1 isolation valve.
- Per the URS work plan, started group #1 wells this month.. Extraction wells E-4, E-5, E-6, E-8, E-10, E-3.1 and E-3.2 were started on February 7<sup>th</sup> and turned off on February 11<sup>th</sup>. The GWTP was online and treated water for 95 hours and 25 minutes
- Operations personnel installed a rebuilt propeller base assembly on the flow meter at extraction well 5.
- Per the TEAD Environmental Office 3,500 gallons of SWMU #58 well development water was received and treated at the treatment plant on February 4<sup>th</sup>.

## TOOELE ARMY DEPOT TEAD / GWTP MONTHLY OPERATING REPORT: March 2005

## **INTRODUCTION:**

The Groundwater Treatment Plant (GWTP) is currently operating in the recirculation mode per the System Non Operation Test, water was recirculated for 740 hours and 51 minutes this month.

### PLANT SAFETY/TRAINING:

There were no lost time accidents. January's Safety Training Topic was "Fire Prevention and Fire Extinguishers".

## **PLANT MAINTENANCE:**

All daily, weekly, and monthly preventative maintenance activities were performed including the inspection of the **IWL** and general upkeep of the treatment facility. The following preventative and corrective maintenance activities were completed this month.

- Completed painting of the GWTP process area walls.
- Started and completed the cleaning, preparation and painting of the GWTP office/control room walls.
- Removal of the sage brush (tumbleweeds) that has accumulated inside and outside of the injection well fences at I-2, I-3, I-4, I-5, I-6, I-7, I-8 and I-9.
- Operations personnel pumped and treated 6,000 gallons of makeup water from E-13 on March 15<sup>th</sup>.
- Operations personnel pumped and treated 6,000 gallons of makeup water from E-13 on March 22<sup>nd</sup>.
- Painted T-1's isolation valve including the yoke and handwheel, new packing gland bolts were also installed.
- Cleaned and painted T-2's isolation valve including the yoke and handwheel. New packing gland bolts were also installed.
- Painting of transfer pump P-1's intake and discharge isolation valve yokes and handwheels.
- Painting of transfer pump P-2's discharge isolation valve yoke and handwheel.
- Painting of transfer pump P-3's intake and discharge isolation valve yokes and handwheels.
- Painting of recirculation pump P-4's intake and discharge isolation valves including the yokes and handwheels.

## TOOELE ARMY DEPOT TEAD / GWTP MONTHLY OPERATING REPORT: April 2005

### **INTRODUCTION:**

The Groundwater Treatment Plant (GWTP) is currently operating in the recirculation mode per the System Non Operation Test, water was recirculated for 709 hours and 43 minutes this month.

## **PLANT SAFETY/TRAINING:**

There were no lost time accidents. April's Safety Training Topic was "Electrical Safety and Lockout/Tagout".

## **PLANT MAINTENANCE:**

All daily, weekly, and monthly preventative maintenance activities were performed including the inspection of the **IWL** and general upkeep of the treatment facility. The following preventative and corrective maintenance activities were completed this month.

- On April 1<sup>st</sup> the GWTP experienced a power outage. TEAD base utilities responded and replaced the sub-station fuses. The GWTP was then placed back into recirculation mode with no further problems.
- Continued pothole repair on the GWTP main access road.
- TEAD base utilities replaced 1 cutout on the spur leading to extraction well E-15.
- Troubleshooting and repair of telemetry failures at extraction well E-4 and injection well I-9.
- TEAD base utilities replaced 1 cutout and jumper wire on the power pole at extraction well E-13.
- Per the TEAD Environmental Office 4,000 gallons of SWMU #58 IDW water was received and treated at the treatment plant on April 13<sup>th</sup>.
- TEAD base utilities replaced 2 cutouts on the power pole at extraction well E-2.1.
- Cleaned and prepped transfer pumps P-1 and P-2 for touch up paint.
- Cleaned and prepped transfer pump P-3 and recirculation pump P-4 for touch up paint.
- Repair of low level wiring connection at extraction well E-3.2 (cattle damage).
- Operations personnel pumped and treated 6,000 gallons of makeup water from E-13 on April 19<sup>th</sup>.
- Rebuilt 2 spare flow meters.
- Removal of the sage brush (tumbleweeds) that has accumulated inside and outside of the fences at injection well I-10 and extraction well E-12.
- Repair of the low level wiring conduit at extraction well E-9 (cattle damage).
- Operations personnel pumped and treated 6,000 gallons of makeup water from E-13 on April 26<sup>th</sup>.

### TOOELE ARMY DEPOT TEAD / GWTP MONTHLY OPERATING REPORT: May 2005

### **INTRODUCTION:**

The Groundwater Treatment Plant (GWTP) is currently operating in the recirculation mode per the System Non Operation Test, water was recirculated for 462 hours and 14 minutes this month. Group #2 wells were also started this month, per the URS work plan. Extraction wells E-1, E-2.1, E-2.2, E-11, E-13, E-14 and E-15 were started on May 9<sup>th</sup> and turned off on May 13<sup>th</sup>. The GWTP was online and treated water for 95 hours and 48 minutes.

### **PLANT SAFETY/TRAINING:**

There were no lost time accidents. May's Safety Training Topic was "Driving Safety/Vehicle Accident Reporting and ATV Safety/SOP Review".

### **PLANT MAINTENANCE:**

All daily, weekly, and monthly preventative maintenance activities were performed including the inspection of the **IWL** and general upkeep of the treatment facility. The following preventative and corrective maintenance activities were completed this month.

- On May 2<sup>nd</sup> the GWTP was shutdown for corrective maintenance and to perform test draining on individual parts of the treatment plant.
- Replacement of the intake valve on transfer pump P-2.
- Replacement of the flow switches on transfer pumps P-1, P-2 and P-3.
- Nickerson Company removed transfer pump P-1 on May 3<sup>rd</sup> for disassembly and inspection.
- Operations personnel installed fittings and valves on the influent piping, effluent piping and air strippers #1 and #2 to facilitate future draining of the GWTP. Operations personnel then drained portions of the treatment plant per the MWH plan.
- The annual air stripper inspection was completed on May 4<sup>th</sup>, no problems were noted. Samples of the tower packing were also removed for the MWH bucket test.
- Replacement of a circuit board in the variable frequency drive at extraction well E-2.1.
- Tuned up the lawn mower and prepared the snow blower for summer storage.
- Per the TEAD Environmental Office approximately 6,600 gallons of SWMU #58 IDW water was received and treated on May 13<sup>th</sup>.
- Repair of the low level probe wiring at extraction well E-14.
- Weed-eating and mowing of the compounds around injection wells I-2, I-3, I-4, I-5, I-6, I-7, I-8 and extraction well E-12.
- On May 18<sup>th</sup> the GWTP shut down and operations personnel were not notified, due to a
  programming glitch in the auto-dialer. Operations personnel troubleshooted the GWTP and
  determined the shutdown was caused by a blown fuse. The fuse was replaced and the autodialer was re-programmed and tested. The GWTP was then restarted with no further
  problems.

- Pumped and treated approximately 6,000 gallons of makeup water from E-13 on May 17<sup>th</sup>.
- Removed and stored the GWTP sump heaters for the summer.
- Operations personnel continued run-off inspections in the injection well field. Also the discharge end of the culvert at injection well I-2 was cut and opened to allow for the increased flow.
- Pumped and treated approximately 6,000 gallons of makeup water from E-13 on May 24<sup>th</sup>.
- On May 30<sup>th</sup> the GWTP experienced a power fluctuation. Operations personnel responded, reset and restarted the GWTP with no further problems.
- Pumped and treated approximately 6,000 gallons of makeup water from E-13 on May 31st.

### TOOELE ARMY DEPOT TEAD / GWTP MONTHLY OPERATING REPORT: June 2005

### **INTRODUCTION:**

The Groundwater Treatment Plant (GWTP) is currently operating in the recirculation mode per the System Non Operation Test, water was recirculated for 643 hours and 55 minutes this month.

### PLANT SAFETY/TRAINING:

There were no lost time accidents. June's Safety Training Topic was "Heat Stress and Bloodborne Pathogen Control".

### **PLANT MAINTENANCE:**

All daily, weekly, and monthly preventative maintenance activities were performed including the inspection of the **IWL** and general upkeep of the treatment facility. The following preventative and corrective maintenance activities were completed this month.

- Weed-eating and mowing of the compounds around injection wells I-9 and I-10.
- On June 3<sup>rd</sup> the GWTP was shut down and all circuit breakers at the extraction and injection wells were opened along with the GWTP main breaker. Due to sub-station work on June 4<sup>th</sup> and 5<sup>th</sup> completed by TEAD Base Utilities, Wilson Construction and All Tech.
- On June 6<sup>th</sup> power was restored to the GWTP. Wilson Construction and All Tech arrived onsite to check rotation before startup. Everything checked out and recirculation was started with no problems. Also the circuit breakers at the extraction and injection wells were closed with no problems noted.
- A new low level conduit was installed at extraction well E-13
- The low level conduit at extraction well E-1 was repaired.
- The roofing panel on the lean-to at extraction well E-1 was repaired.
- Operations personnel pumped and treated 6,000 gallons of makeup water from E-13 on June 7<sup>th</sup>.
- Preparation and re-attachment of loose insulation in the well vaults at extraction wells E-6, E-10 and injection well I-12.
- Mowing and weed-eating of the GWTP perimeter.
- Operations personnel pumped and treated 6,000 gallons of makeup water from E-13 on June 14<sup>th</sup>.
- Mowing and weed-eating of extraction wells E-1, E-2.1, E-2.2, E-3.1, E-3.2, E-4, E-5, E-6, E-8, E-9, E-10, E-13 and injection wells I-1, I-11, I-12 and I-13.
- Operations personnel pumped and treated 6,000 gallons of makeup water from E-13 on June 21<sup>st</sup>.
- Uncovered a buried isolation valve at E-8.
- Operations personnel pumped and treated 6,000 gallons of makeup water from E-13 on June 28<sup>th</sup>.

### APPENDIX B

### WEEKLY EXTRACTION WELL MONITORING

Weeks of 12 January – 28 June 2005

# **EXTRACTION WELL WEEKLY MONITORING JANUARY 12, 2005**

													<del></del>				
REASON DOWN	* * *	* * *	* * *	***	***	* *	**	* * *	* * *	3	***	***		***	***	* * *	
DOWNTIME**	11522	11620	11625	11603	11600	11510	11439	11497	11507	11512	11512	11582	0	11594	11625	11625	
PRESSURE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
AVG GPM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
WEEK'S TOTAL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
GALLONS TO DATE	1,694,505,000	783,401,000	2,094,456,000	1,538,775,000	1,536,133,000	1,575,672,000	3,257,076,000	2,079,104,000	921,164,000	2,209,542,000	3,069,704,000	2,191,054,000	164,193,000	2,377,856,000	2,039,494,000	2,450,310,000	
*LEVEL	* *	**	**	**	* *	* *	* * *	*	* *	***	***	* *	148.41	**	*	* *	
GPM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	<b></b>
TIME	14:29	12:22	12:24	11:54	11:55	10:58	11:16	10:49	11:06	11:23	11:20	14:56	15:03	12:16	12:08	12:33	
WELL	E-1	E-2-1	E-2-2	E-3-1	E-3-2	E-4	E-5	E-6	Ē-8	E-9	E-10	E-11	E-12	E-13	E-14	E-15	

\* DEPTH TO WATER (BTC)

\*\*DOWNTIME IN MINUTES

\*\*\* TRANSDUCERS IN E-WELLS

\*\*\*\* WELL OFFLINE FOR SYSTEM NON OPERATION TEST

(1) POWER FLUCTUATION(2) PREVENTATIVE MAINTENANCE(3) CORRECTIVE MAINTENANCE

## **JANUARY 19, 2005**

NWOO NO	* * *	**	**	***	* * *	* * *	* * *	* * *	* * *	က	* * *	* * *		* * *	**	***	
REAS(																	
DOWNTIME** REASON DOWN	9914	10023	10019	10024	10019	10030	10026	10032	10029	10032	10029	9891	0	6963	10018	10019	
PRESSURE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
AVG GPM	0	0	0	0	0	0	0	0	0	0	0	0	0	109	0	0	NO
WEEK'S TOTAL	0	0	0	0	0	0	0	0	0	0	0	0	0	6,000	0	0	(1) POWER FLUCTUATION
*LEVEL GALLONS TO DATE	1,694,505,000	783,401,000	2,094,456,000	1,538,775,000	1,536,133,000	1,575,672,000	3,257,076,000	2,079,104,000	921,164,000	2,209,542,000	3,069,704,000	2,191,054,000	164,193,000	2,377,862,000	2,039,494,000	2,450,310,000	
*LEVEL	**	**	*	*	**	***	* *	* *	*	***	***	* * *	148.18	* *	*	* *	
GPM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
TIME	11:43	11:25	11:23	10:58	10:54	10:08	10:22	10:01	10:15	10:35	10:29	11:47	14:17	11:14	11:06	11:32	rer (btc)
WELL	E-1	E-2-1	E-2-2	E-3-1	E-3-2	E-4	E-5	E-6	E-8	E-9	E-10	E-11	E-12	E-13	E-14	E-15	* DEPTH TO WATER (BTC)

DEPTH TO WATER (BTC)

<sup>\*\*</sup>DOWNTIME IN MINUTES

<sup>\*\*\*</sup> TRANSDUCERS IN E-WELLS

<sup>(2)</sup> PREVENTATIVE MAINTENANCE

<sup>(3)</sup> CORRECTIVE MAINTENANCE

<sup>\*\*\*\*</sup> WELL OFFLINE FOR SYSTEM NON OPERATION TEST

# EXTRACTION WELL WEEKLY MONITORING JANUARY 25, 2005

IIIM	TIME	CPM	*  =\/=!	CALL ONG TO DATE	WEEK'S TOTA!		70100		
	13:18	0		1.694.505.000	WEEKS 101AL	SILD DAG	FRESSURE	BOWIN LIME	REASON DOWN
E-2-1	12:12	0	* *	783.401.000				26.70	** **
E-2-2	12:09	0	* *	2,094,456,000	0	0	0	8686	****
E-3-1	12:03	0	* *	1,538,775,000	0	0	0	8705	****
E-3-2	12:05	0	* *	1,536,133,000	0	0	0	8651	***
E-4	12:49	0	**	1,575,672,000	0	0	0	8801	***
E-5	13:04	0	***	3,257,076,000	0	0	0	8802	***
E-6	12:54	0	***	2,079,104,000	0	0	0	8813	***
Е. 8	12:59	0	* * *	921,164,000	0	0	0	8804	* * *
E-9	13:12	0	***	2,209,542,000	0	0	0	8797	က
E-10	13:09	0	* *	3,069,704,000	0	0	0	8800	***
E-11	12:19	0	* *	2,191,054,000	0	0	0	8672	****
E-12	13:43	0	148.31	164,193,000	0	0	0	0	
E-13	12:38	0	* * *	2,377,868,000	6,000	102	0	8665	***
E-14	11:53	0	* *	2,039,494,000	0	0	0	8687	* * *
E-15	12:26	0	* *	2,450,310,000	0	0	0	8694	****
THE OF LITTING *	(C+0) 0								

<sup>\*</sup> DEPTH TO WATER (BTC)

<sup>\*\*</sup> DOWNTIME IN MINUTES

<sup>\*\*\*</sup> TRANSDUCERS IN E-WELLS

<sup>(1)</sup> POWER FLUCTUATION

<sup>(2)</sup> PREVENTATIVE MAINTENANCE(3) CORRECTIVE MAINTENANCE

# **EXTRACTION WELL WEEKLY MONITORING** FEBRUARY 1, 2005

REASON DOWN	* * *	* * *	***	* * * *	***	* * * *	***	***	***	က	* * * *	* * * *		* * *	* * * *	* * *
PRESSURE DOWNTIME**	10002	10027	10033	10007	10008	9918	9915	9066	9915	9915	9915	10095	0	9995	10030	10024
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AVG GPM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
WEEK'S TOTAL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
*LEVEL GALLONS TO DATE	1,694,505,000	783,401,000	2,094,456,000	1,538,775,000	1,536,133,000	1,575,672,000	3,257,076,000	2,079,104,000	921,164,000	2,209,542,000	3,069,704,000	2,191,054,000	164,193,000	2,377,868,000	2,039,494,000	2,450,310,000
*LEVEL	* *	* *	*	* *	* *	* *	**	* *	* *	* *	***	* *	148.26	* *	* *	* *
GPM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TIME	12:00	11:19	11:22	10:50	10:53	10:07	10:19	10:00	10:19	10:28	10:24	12:34	13:49	11:13	11:03	11:30
WELL	П <del>-</del> 1	E-2-1	E-2-2	E-3-1	E-3-2	E-4	E-5	E-6	E-8	6-Ш	E-10	E-11	E-12	E-13	E-14	E-15

\* DEPTH TO WATER (BTC)

\*\*DOWNTIME IN MINUTES

\*\*\* TRANSDUCERS IN E-WELLS

(2) PREVENTATIVE MAINTENANCE(3) CORRECTIVE MAINTENANCE

(1) POWER FLUCTUATION

\*\*\*\* WELL OFFLINE FOR SYSTEM NON OPERATION TEST

# **EXTRACTION WELL WEEKLY MONITORING** FEBRUARY 8, 2005

	T	T	,		<del></del>					<del>,</del>	<del>,</del>	·				·
PRESSURE DOWNTIME** REASON DOWN	* * *	***	* * *	***	***	***	***	* * *	* * *	က	* * *	* * *		***	* * *	* * * *
DOWNTIME**	10095	10126	10120	8695	8700	8663	8810	8826	8803	10115	8701	10069	0	10098	10045	10119
PRESSURE	0	0	0	0	25	0	0	0	0	0	0	0	0	0	0	0
AVG GPM	0	0	0	95	124	78	134	102	113	0	134	0	0	0	0	0
WEEK'S TOTAL	0	0	0	137,000	178,000	111,000	173,000	131,000	147,000	0	189,000	0	0	0	0	0
*LEVEL GALLONS TO DATE	1,694,505,000	783,401,000	2,094,456,000	1,538,912,000	1,536,311,000	1,575,783,000	3,257,249,000	2,079,235,000	921,311,000	2,209,542,000	3,069,893,000	2,191,054,000	164,193,000	2,377,868,000	2,039,494,000	2,450,310,000
*LEVEL	* *	* *	* *	* *	* *	* * *	* *	* *	* *	* *	* *	* *	148.35	* * *	**	* * *
GPM	0	0	0	06	100	100	100	100	90	0	120	0	0	0	0	0
TIME	12:15	12:05	12:02	11:47	11:52	10:19	10:44	10:29	10:38	11:00	10:52	12:23	12:47	11:31	11:38	12:09
WELL	Н- 1-	E-2-1	E-2-2	E-3-1	E-3-2	E-4	E-5	Б-6	臣-8	6-Ш	E-10	E-11	E-12	E-13	E-14	E-15

<sup>\*</sup> DEPTH TO WATER (BTC)

<sup>\*\*</sup>DOWNTIME IN MINUTES

<sup>\*\*\*</sup> TRANSDUCERS IN E-WELLS

<sup>\*\*\*\*</sup> WELL OFFLINE FOR SYSTEM NON OPERATION TEST

<sup>(1)</sup> POWER FLUCTUATION

<sup>(2)</sup> PREVENTATIVE MAINTENANCE(3) CORRECTIVE MAINTENANCE

# **EXTRACTION WELL WEEKLY MONITORING FEBRUARY 15, 2005**

										П				1			1
DOWNTIME** REASON DOWN	** **	**	** ** *	** **	* * *	* * *	** **	** **	* * *	င	* * *	* * *		* * * *	* * * *	* * *	
DOWNTIME**	10054	10050	10051	5723	5709	5741	5714	5718	5721	10056	5706	10084	0	10073	10059	10053	
PRESSURE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
AVG GPM	0	0	0	98	118	91	138	107	116	0	144	0	0	0	0	0	7
WEEK'S TOTAL	0	0	0	424,000	511,000	396,000	599,000	465,000	503,000	0	628,000	0	0	0	0	0	(1) POWER FLUCTUATION
*LEVEL GALLONS TO DATE	1,694,505,000	783,401,000	2,094,456,000	1,539,336,000	1,536,822,000	1,576,179,000	3,257,848,000	2,079,700,000	921,814,000	2,209,542,000	3,070,521,000	2,191,054,000	164,193,000	2,377,868,000	2,039,494,000	2,450,310,000	
*LEVEL	* *	* * *	**	* *	* *	***	* *	* *	* *	**	* *	**	147.98	* * *	*	**	
GPM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
TIME	11:49	11:35	11:33	11:08	11:02	10:11	10:25	10:04	10:20	10:36	10:31	12:27	12:37	11:24	11:17	11:42	ER (BTC)
WELL	E-1	E-2-1	E-2-2	E-3-1	E-3-2	E-4	E-5	E-6	E- 8	E-9	E-10	E-11	E-12	E-13	E-14	E-15	* DEPTH TO WATER (BTC)

DEPTH TO WATER (BTC)

<sup>\*\*</sup>DOWNTIME IN MINUTES

<sup>\*\*\*</sup> TRANSDUCERS IN E-WELLS

<sup>\*\*\*\*</sup> WELL OFFLINE FOR SYSTEM NON OPERATION TEST

<sup>(2)</sup> PREVENTATIVE MAINTENANCE(3) CORRECTIVE MAINTENANCE

# **EXTRACTION WELL WEEKLY MONITORING** FEBRUARY 22, 2005

REASON DOWN	* * *	* * *	***	* * *	* * *	* * *	* * *	* * *	* * *	က	** **	* * *		* * *	* * *	***
DOWNTIME**	10125	10097	10093	10107	10117	10093	10100	10107	10099	10101	10102	10095	0	10069	10086	10107
PRESSURE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	C
AVG GPM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	O
WEEK'S TOTAL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	O
*LEVEL GALLONS TO DATE	1,694,505,000	783,401,000	2,094,456,000	1,539,336,000	1,536,822,000	1,576,179,000	3,257,848,000	2,079,700,000	921,814,000	2,209,542,000	3,070,521,000	2,191,054,000	164,193,000	2,377,868,000	2,039,494,000	2 450 310 000
*LEVEL	**	***	*	* *	* *	* * *	* * *	* * *	* *	* * *	* *	* * *	148.02	* *	* *	* *
GPM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TIME	12:34	11:52	11:46	11:35	11:39	10:24	10:45	10:31	10:39	10:57	10:53	12:42	13:13	11:13	11:23	12:26
WELL	П-1	E-2-1	E-2-2	E-3-1	E-3-2	E-4	E-5	E-6	<u>г</u> 8	E-9	E-10	E-11	E-12	E-13	E-14	E-15

\* DEPTH TO WATER (BTC)

\*\*DOWNTIME IN MINUTES

\*\*\* TRANSDUCERS IN E-WELLS

\*\*\*\* WELL OFFLINE FOR SYSTEM NON OPERATION TEST

POWER FLUCTUATION
 PREVENTATIVE MAINTENANCE
 CORRECTIVE MAINTENANCE

# **EXTRACTION WELL WEEKLY MONITORING MARCH 1, 2005**

																	ı
PRESSURE DOWNTIME** REASON DOWN	* * *	* * *	***	* * *	* * *	***	** **	***	****	က	* * *	* * *		* * *	* * *	* * * *	
DOWNTIME**	9376	9666	9998	9983	9985	10025	10013	10012	10015	10011	9967	6666	0	10025	10008	9970	
PRESSURE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
AVG GPM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
WEEK'S TOTAL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
*LEVEL GALLONS TO DATE	1,694,505,000	783,401,000	2,094,456,000	1,539,336,000	1,536,822,000	1,576,179,000	3,257,848,000	2,079,700,000	921,814,000	2,209,542,000	3,070,521,000	2,191,054,000	164,193,000	2,377,868,000	2,039,494,000	2,450,310,000	
*LEVEL	* *	**	* *	*	**	*	* *	* *	* *	* *	**	**	148.18	*	**	***	
GPM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
TIME	10:50	10:28	10:24	9:58	10:04	9:29	9:38	9:23	9:34	9:48	9:45	11:21	11:32	10:18	10:11	10:36	1
WELL	Щ	E-2-1	E-2-2	E-3-1	E-3-2	E-4	G-3	E-6	8-3	E-9	E-10	E-11	E-12	E-13	E-14	E-15	

<sup>\*</sup> DEPTH TO WATER (BTC)

<sup>\*\*</sup>DOWNTIME IN MINUTES

<sup>\*\*\*</sup> TRANSDUCERS IN E-WELLS

<sup>\*\*\*\*</sup> WELL OFFLINE FOR SYSTEM NON OPERATION TEST

<sup>(1)</sup> POWER FLUCTUATION

<sup>(2)</sup> PREVENTATIVE MAINTENANCE(3) CORRECTIVE MAINTENANCE

### **MARCH 8, 2005**

0.000	I		r	T	Γ											
REASON DOWN	***	* * *	***	***	***	* * *	* * *	* * *	** *	3	* * *	** **		**	* * *	* * *
PRESSURE DOWNTIME**	10144	10157	10157	10177	10173	10143	10152	10117	10151	10163	10161	10121	0	10140	10155	10153
PRESSURE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AVG GPM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
WEEK'S TOTAL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
*LEVEL GALLONS TO DATE	1,694,505,000	783,401,000	2,094,456,000	1,539,336,000	1,536,822,000	1,576,179,000	3,257,848,000	2,079,700,000	921,814,000	2,209,542,000	3,070,521,000	2,191,054,000	164,193,000	2,377,868,000	2,039,494,000	2,450,310,000
*LEVEL	* * *	* * *	* * *	* *	* * *	* * *	* * *	* * *	* * *	* *	* * *	* * *	148.12	* * *	* *	* *
GPM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TIME	11:54	11:45	11:41	11:35	11:37	10:32	10:50	10:37	10:45	11:11	11:06	12:02	12:43	11:18	11:26	11:49
WELL	E-1	E-2-1	E-2-2	E-3-1	E-3-2	E-4	E-5	E-6	E-8	E-9	E-10	П- 11	E-12	E-13	E-14	E-15

<sup>\*</sup> DEPTH TO WATER (BTC)

<sup>\*\*</sup>DOWNTIME IN MINUTES

<sup>\*\*\*</sup> TRANSDUCERS IN E-WELLS

<sup>\*\*\*\*</sup> WELL OFFLINE FOR SYSTEM NON OPERATION TEST

<sup>(1)</sup> POWER FLUCTUATION

<sup>(2)</sup> PREVENTATIVE MAINTENANCE(3) CORRECTIVE MAINTENANCE

# **EXTRACTION WELL WEEKLY MONITORING MARCH 15, 2005**

PRESSURE DOWNTIME** REASON DOWN	* * *	* * *	* * *	***	***	***	***	***	* * *	က	** **	* * *		***	** **	* * * *
DOWNTIME**	10102	10056	10063	10042	10042	10146	10143	10037	10139	10134	10135	10100	0	10023	10043	10035
PRESSURE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AVG GPM	0	0	0	0	0	0	0	0	0	0	0	0	0	107	0	0
WEEK'S TOTAL	0	0	0	0	0	0	0	0	0	0	0	0	0	6,000	0	0
*LEVEL GALLONS TO DATE	1,694,505,000	783,401,000	2,094,456,000	1,539,336,000	1,536,822,000	1,576,179,000	3,257,848,000	2,079,700,000	921,814,000	2,209,542,000	3,070,521,000	2,191,054,000	164,193,000	2,377,874,000	2,039,494,000	2,450,310,000
*LEVEL	*	**	**	* *	* * *	**	* *	* * *	* * *	***	* * *	* * *	147.75	* *	* *	***
GPM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TIME	12:16	11:21	11:24	10:57	10:59	11:38	11:53	9:54	11:44	12:05	12:01	12:22	12:32	11:17	10:49	11:04
WELL	<u>п</u>	E-2-1	E-2-2	E-3-1	E-3-2	E-4	E-5	E-6	E-8	E-9	E-10	П-11	E-12	E-13	E-14	E-15

\* DEPTH TO WATER (BTC)

\*\*DOWNTIME IN MINUTES

\*\*\* TRANSDUCERS IN E-WELLS

\*\*\*\* WELL OFFLINE FOR SYSTEM NON OPERATION TEST

(1) POWER FLUCTUATION(2) PREVENTATIVE MAINTENANCE(3) CORRECTIVE MAINTENANCE

# **EXTRACTION WELL WEEKLY MONITORING** MARCH 22, 2005

AVG GPM PRESSURE DOWNTIME** REASON DOWN	***	* * *	* * *	* * *	***	***	***	* * * *	* * * *	က	***	* * *		* * *	* * * *	* * *
DOWNTIME**	9975	10021	10015	10035	10036	10041	10045	10151	10048	10120	10041	2666	0	2866	10031	10042
PRESSURE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AVG GPM	0	0	0	0	0	0	0	0	0	0	0	0	0	102	0	0
WEEK'S TOTAL	0	0	0	0	0	0	0	0	0	0	0	0	0	6,000	0	0
*LEVEL GALLONS TO DATE	1,694,505,000	783,401,000	2,094,456,000	1,539,336,000	1,536,822,000	1,576,179,000	3,257,848,000	2,079,700,000	921,814,000	2,209,542,000	3,070,521,000	2,191,054,000	164,193,000	2,377,880,000	2,039,494,000	2,450,310,000
*LEVEL	*	*	* *	*	* *	*	* *	* * *	* * *	* * *	* *	**	147.65	* *	**	**
GPM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TIME	10:31	10:22	10:19	10:12	10:15	10:59	11:18	11:05	11:12	11:25	11:22	10:39	11:49	10:43	10:00	10:26
WELL	<u>п</u>	E-2-1	E-2-2	E-3-1	E-3-2	E-4	E-5	E-6	臣-8	Б-9	E-10	E-11	E-12	E-13	E-14	E-15

<sup>\*</sup> DEPTH TO WATER (BTC)

(1) POWER FLUCTUATION

<sup>\*\*</sup>DOWNTIME IN MINUTES

<sup>\*\*\*</sup> TRANSDUCERS IN E-WELLS

<sup>\*\*\*\*</sup> WELL OFFLINE FOR SYSTEM NON OPERATION TEST

<sup>(2)</sup> PREVENTATIVE MAINTENANCE(3) CORRECTIVE MAINTENANCE

# **EXTRACTION WELL WEEKLY MONITORING MARCH 29, 2005**

		,						γ									4
REASON DOWN	* * * *	* * * *	* * *	* * * *	* * * *	* * *	* * * *	* * *	* * *	3	* * * *	* * * *		* * * *	* * * *	* * *	
PRESSURE DOWNTIME**	10243	10226	10226	10201	10192	10108	10100	10096	10101	10105	10105	10245	0	10194	10226	10231	
PRESSURE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
AVG GPM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
WEEK'S TOTAL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
*LEVEL GALLONS TO DATE	1,694,505,000	783,401,000	2,094,456,000	1,539,336,000	1,536,822,000	1,576,179,000	3,257,848,000	2,079,700,000	921,814,000	2,209,542,000	3,070,521,000	2,191,054,000	164,193,000	2,377,880,000	2,039,494,000	2,450,310,000	
*LEVEL	* *	* *	* *	*	* *	* *	* *	**	* * *	* *	* *	*	147.79	* *	* *	* *	
GPM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
TIME	13:14	12:48	12:45	12:13	12:07	11:27	11:38	11:21	11:33	11:50	11:47	13:24	10:38	12:37	12:26	12:57	1
WELL	щ	E-2-1	E-2-2	E-3-1	E-3-2	E-4	E-5	E-6	E-8	E-9	E-10	<del>П</del> -1	E-12	E-13	E-14	E-15	

<sup>\*</sup> DEPTH TO WATER (BTC)

<sup>\*\*</sup>DOWNTIME IN MINUTES

<sup>\*\*\*</sup> TRANSDUCERS IN E-WELLS

<sup>\*\*\*\*</sup> WELL OFFLINE FOR SYSTEM NON OPERATION TEST

<sup>(1)</sup> POWER FLUCTUATION

<sup>(2)</sup> PREVENTATIVE MAINTENANCE (3) CORRECTIVE MAINTENANCE

# **EXTRACTION WELL WEEKLY MONITORING APRIL 6, 2005**

N. Sala	т	1	1	T	T	T	т	T	T	т		г	T	<del></del>	r	T
REASON DOWN	* * *	* * *	***	* * *	* * *	***	***	***	***	က	***	***		* * * *	***	* * *
DOWNTIME**	11406	11420	11419	11441	11450	11436	11441	11447	11442	11436	11435	11404	0	11350	11415	11417
PRESSURE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AVG GPM	0	0	0	0	0	0	0	0	0	0	0	0	0	130	0	0
WEEK'S TOTAL	0	0	0	0	0	0	0	0	0	0	0	0	0	6,000	0	0
*LEVEL GALLONS TO DATE	1,694,505,000	783,401,000	2,094,456,000	1,539,336,000	1,536,822,000	1,576,179,000	3,257,848,000	2,079,700,000	921,814,000	2,209,542,000	3,070,521,000	2,191,054,000	164,193,000	2,377,886,000	2,039,494,000	2,450,310,000
*LEVEL	* * *	**	**	* * *	* * *	* *	**	* *	* *	* * *	*	* * *	147.82	* *	* *	* * *
GPM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TIME	11:20	11:08	11:04	10:54	10:57	10:03	10:19	10:08	10:15	10:26	10:22	11:28	12:00	10:33	10:41	11:14
WELL	<u>П</u>	E-2-1	E-2-2	E-3-1	E-3-2	E-4	E-5	E-6	њ. 8	6-Ш	E-10	E-11	E-12	E-13	E-14	E-15

\* DEPTH TO WATER (BTC)

\*\*DOWNTIME IN MINUTES

\*\*\* TRANSDUCERS IN E-WELLS

\*\*\*\* WELL OFFLINE FOR SYSTEM NON OPERATION TEST

POWER FLUCTUATION
 PREVENTATIVE MAINTENANCE
 CORRECTIVE MAINTENANCE

# **EXTRACTION WELL WEEKLY MONITORING APRIL 12, 2005**

WELL	TIME	GPM	*LEVEL	*LEVEL GALLONS TO DATE	WEEK'S TOTAL	AVG GPM		PRESSURE DOWNTIME**	REASON DOWN
E-1	11:20	0	* *	1,694,505,000	0	0	0	8668	* * * *
E-2-1	11:08	0	* * *	783,401,000	0	0	0	8623	* * * *
E-2-2	11:04	0	* *	2,094,456,000	0	0	0	8623	* * * *
E-3-1	10:54	0	* * *	1,539,336,000	0	0	0	8622	***
E-3-2	10:57	0	* *	1,536,822,000	0	0	0	8623	* * * *
E-4	10:03	0	* *	1,576,179,000	0	0	0	8706	***
E-5	10:19	0	* *	3,257,848,000	0	0	0	8706	***
E-6	10:08	0	* * *	2,079,700,000	0	0	0	8706	* * *
ш 8	10:15	0	* *	921,814,000	0	0	0	8705	* * *
E-9	10:26	0	***	2,209,542,000	0	0	0	8208	က
E-10	10:22	0	**	3,070,521,000	0	0	0	8709	* * *
E-11	11:28	0	* * *	2,191,054,000	0	0	0	8664	* * *
E-12	12:00	0	147.85	164,193,000	0	0	0	0	
E-13	10:33	0	***	2,377,886,000	0	0	0	8622	* * *
E-14	10:41	0	* *	2,039,494,000	0	0	0	8625	* * * *
E-15	11:14	0	***	2,450,310,000	0	0	0	8623	***
* DEPTH TO WATER (BTC) **DOWNTIME IN MINUTES *** TRANSDUCERS IN E-WELLS	ER (BTC) IINUTES 3 IN E-WELLS				<ul><li>(1) POWER FLUCTUATION</li><li>(2) PREVENTATIVE MAINTENANCE</li><li>(3) CORRECTIVE MAINTENANCE</li></ul>	N ITENANCE ENANCE			

<sup>\*</sup> DEPTH TO WATER (BTC)

<sup>\*\*</sup>DOWNTIME IN MINUTES

<sup>\*\*\*</sup> TRANSDUCERS IN E-WELLS

<sup>\*\*\*\*</sup> WELL OFFLINE FOR SYSTEM NON OPERATION TEST

### **APRIL 19, 2005**

_	_																
REASON DOWN	* * *	***	* * * *	***	***	* * * *	***	* * * *	* * * *	3	****	* * *		***	* * * *	***	
AVG GPM PRESSURE DOWNTIME**	10076	10108	10115	10117	10108	10024	10016	10014	10018	10013	10014	10107	0	10050	10112	10111	
PRESSURE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
AVG GPM	0	0	0	0	0	0	0	0	0	0	0	0	0	111	0	0	
WEEK'S TOTAL	0	0	0	0	0	0	0	0	0	0	0	0	0	6,000	0	0	
*LEVEL GALLONS TO DATE	1,694,505,000	783,401,000	2,094,456,000	1,539,336,000	1,536,822,000	1,576,179,000	3,257,848,000	2,079,700,000	921,814,000	2,209,542,000	3,070,521,000	2,191,054,000	164,193,000	2,377,892,000	2,039,494,000	2,450,310,000	
*LEVEL	* *	* *	**	***	* *	* * *	* *	* *	**	***	**	* *	147.80	* *	***	* *	
GPM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
TIME	11:13	11:08	10:13	10:21	10:08	10:18	10:27	10:25	12:19	12:53	10:39	10:58	11:28	10:40	11:00	11:29	() FC
WELL	<u>П</u>	E-2-1	E-2-2	E-3-1	E-3-2	E-4	E-5	E-6	<u>г</u> 8	Б <del>-</del> 9	E-10	E-11	E-12	E-13	E-14	E-15	() + () () () + () + () () () () () () () () () () () () ()

DEPTH TO WATER (BTC)

<sup>\*\*</sup>DOWNTIME IN MINUTES

<sup>\*\*\*</sup> TRANSDUCERS IN E-WELLS

<sup>\*\*\*\*</sup> WELL OFFLINE FOR SYSTEM NON OPERATION TEST

<sup>(1)</sup> POWER FLUCTUATION

<sup>(2)</sup> PREVENTATIVE MAINTENANCE(3) CORRECTIVE MAINTENANCE

### **APRIL 26, 2005**

PRESSURE DOWNTIME** REASON DOWN	***	***	***	***	** **	** **	***	** *	* * *	3	** **	* * *		***	** *	* * *
DOWNTIME**	10021	10033	10027	10028	10036	10138	10148	10149	10147	10151	10150	3666	0	10041	10031	10030
PRESSURE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AVG GPM	0	0	0	0	0	0	0	0	0	0	0	0	0	100	0	0
WEEK'S TOTAL	0	0	0	0	0	0	0	0	0	0	0	0	0	6,000	0	0
*LEVEL GALLONS TO DATE	1,694,505,000	783,401,000	2,094,456,000	1,539,336,000	1,536,822,000	1,576,179,000	3,257,848,000	2,079,700,000	921,814,000	2,209,542,000	3,070,521,000	2,191,054,000	164,193,000	2,377,898,000	2,039,494,000	2,450,310,000
*LEVEL	* * *	* *	**	***	* * *	* * *	* * *	**	* * *	* * *	***	* * *	147.82	**	* *	* * *
GPM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TIME	10:45	10:32	10:29	10:21	10:24	1:1	11:29	11:17	11:25	11:38	11:35	10:51	12:36	11:00	10:09	10:38
WELL	П-1	E-2-1	E-2-2	E-3-1	E-3-2	E-4	E-5	E-6	E-8	E-9	E-10	E-11	E-12	E-13	E-14	E-15

<sup>\*</sup> DEPTH TO WATER (BTC)

<sup>\*\*</sup>DOWNTIME IN MINUTES

<sup>\*\*\*</sup> TRANSDUCERS IN E-WELLS

<sup>\*\*\*\*</sup> WELL OFFLINE FOR SYSTEM NON OPERATION TEST

<sup>(1)</sup> POWER FLUCTUATION(2) PREVENTATIVE MAINTENANCE(3) CORRECTIVE MAINTENANCE

MAY 3, 2005

									· · · · · · · · · · · · · · · · · · ·		······································						
DOWNTIME** REASON DOWN	* * *	* * *	* * *	* * *	* * * *	***	* * *	***	* * *	* * *	* * *	* * *		* * * *	* * * *	***	
DOWNTIME**	10154	10139	10111	10129	10123	10050	10041	10039	10041	10039	10039	10181	0	10106	10148	10141	
PRESSURE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
AVG GPM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
WEEK'S TOTAL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	(1) BOWED ELLICATION
*LEVEL GALLONS TO DATE	1,694,505,000	783,401,000	2,094,456,000	1,539,336,000	1,536,822,000	1,576,179,000	3,257,848,000	2,079,700,000	921,814,000	2,209,542,000	3,070,521,000	2,191,054,000	164,193,000	2,377,898,000	2,039,494,000	2,450,310,000	
*LEVEL	**	* *	* *	**	***	***	**	* *	* *	* *	* *	*	147.80	* *	* *	* *	
GPM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
TIME	11:59	11:31	11:34	11:10	11:07	10:41	10:50	10:36	10:46	10:57	10:54	12:32	12:38	11:26	11:17	11:39	יסדמי מי
WELL	E-1	E-2-1	E-2-2	E-3-1	E-3-2	E-4	E-5	E-6	ъ ф	6-3	E-10	E-11	E-12	E-13	E-14	E-15	(O+a) antv/W O+ ()+and *

<sup>\*</sup> DEPTH TO WATER (BTC)

<sup>\*\*</sup>DOWNTIME IN MINUTES

<sup>\*\*\*</sup> TRANSDUCERS IN E-WELLS

<sup>\*\*\*\*</sup> WELL OFFLINE FOR SYSTEM NON OPERATION TEST

<sup>(1)</sup> POWER FLUCTUATION

<sup>(2)</sup> PREVENTATIVE MAINTENANCE(3) CORRECTIVE MAINTENANCE

MAY 10, 2005

DOWN	٠ـــــــــــــــــــــــــــــــــــــ	<b>-د</b>	<u>-</u> د	4.	Ŀ	b-		<b>.</b>	L.		L.			L		t.
REASON	***	* * *	* * *	***	* * *	* * *	* * *	**	* * * *	8	***	****		****	***	****
PRESSURE DOWNTIME** REASON DOWN	8684	8851	8630	10117	10124	10112	10120	10123	10120	10121	10121	0998	0	8624	1998	6898
PRESSURE	52	38	38	0	0	0	0	0	0	0	0	20	0	26	24	50
AVG GPM	110	102	106	0	0	0	0	0	0	0	0	97	0	101	113	145
WEEK'S TOTAL	160,000	130,000	158,000	0	0	0	0	0	0	0	0	141,000	0	151,000	165,000	216,000
*LEVEL GALLONS TO DATE	1,694,665,000	783,531,000	2,094,614,000	1,539,336,000	1,536,822,000	1,576,179,000	3,257,848,000	2,079,700,000	921,814,000	2,209,542,000	3,070,521,000	2,191,195,000	164,193,000	2,378,049,000	2,039,659,000	2,450,526,000
*LEVEL	**	***	***	* *	* *	* * *	* *	* * *	* *	* *	* * *	**	147.72	*	* * *	* * *
GPM	100	110	100	0	0	0	0	0	0	0	0	110	0	100	100	140
TIME	12:55	12:17	12:13	11:47	11:51	11:13	11:30	11:19	11:26	11:38	11:35	13:01	13:41	12:07	11:58	12:27
WELL	<u></u>	E-2-1	E-2-2	E-3-1	E-3-2	E-4	E-5	E-6	<u>п</u>	E-9	E-10	E-11	E-12	E-13	E-14	E-15

<sup>\*</sup> DEPTH TO WATER (BTC)

<sup>\*\*</sup>DOWNTIME IN MINUTES

<sup>\*\*\*</sup> TRANSDUCERS IN E-WELLS

<sup>\*\*\*\*</sup> WELL OFFLINE FOR SYSTEM NON OPERATION TEST

<sup>(1)</sup> POWER FLUCTUATION

<sup>(2)</sup> PREVENTATIVE MAINTENANCE(3) CORRECTIVE MAINTENANCE

### MAY 17, 2005

977 <u>6</u> 637	T	Τ	Τ	Т	Τ	T	T	I	T	T	I	T	Г	Ι	Ι	Τ
AVG GPM PRESSURE DOWNTIME** REASON DOWN	* * *	* *	* * *	***	***	***	***	***	****	က	* * *	* * * *		***	***	* * * *
DOWNTIME**	5706	5583	5796	10046	10039	10013	10001	10030	10017	10000	10000	5736	0	5679	5757	5754
PRESSURE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AVG GPM	117	102	110	0	0	0	0	0	0	0	0	66	<b>~</b>	108	115	96
WEEK'S TOTAL	505,000	453,000	468,000	0	0	0	0	0	0	0	0	425,000	9,000	466,000	492,000	412,000
*LEVEL GALLONS TO DATE	1,695,170,000	783,984,000	2,095,082,000	1,539,336,000	1,536,822,000	1,576,179,000	3,257,848,000	2,079,700,000	921,814,000	2,209,542,000	3,070,521,000	2,191,620,000	164,202,000	2,378,515,000	2,040,151,000	2,450,938,000
*LEVEL	* *	* * *	*	* *	* *	* *	* *	* * *	* * *	* * *	* * *	* * *	147.77	* * *	* * *	**
GPM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TIME	11:49	11:20	11:25	11:13	11:10	10:06	10:11	10:29	10:23	10:18	10:15	12:28	12:57	10:41	10:56	11:34
WELL	<del>т</del>	E-2-1	E-2-2	E-3-1	E-3-2	E-4	E-5	E-6	臣. 8	E-9	E-10	E-11	E-12	E-13	E-14	E-15

<sup>\*</sup> DEPTH TO WATER (BTC)

<sup>\*\*</sup>DOWNTIME IN MINUTES

<sup>\*\*\*</sup> TRANSDUCERS IN E-WELLS

<sup>\*\*\*\*</sup> WELL OFFLINE FOR SYSTEM NON OPERATION TEST

<sup>(1)</sup> POWER FLUCTUATION

<sup>(2)</sup> PREVENTATIVE MAINTENANCE(3) CORRECTIVE MAINTENANCE

### MAY 24, 2005

EASON DOWN	* * *	* * *	***	****	***	* * *	* * * *	***	***	3	* * * *	* * *		* * *	* * * *	* * *
PRESSURE DOWNTIME** REASON DOWN	10172	10192	10184	10188	10194	10210	10224	10192	10207	10227	10227	10142	0	10073	10198	10183
PRESSURE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AVG GPM	0	0	0	0	0	0	0	0	0	0	0	0	0	100	0	0
WEEK'S TOTAL	0	0	0	0	0	0	0	0	0	0	0	0	0	6,000	0	0
*LEVEL GALLONS TO DATE	1,695,170,000	783,984,000	2,095,082,000	1,539,336,000	1,536,822,000	1,576,179,000	3,257,848,000	2,079,700,000	921,814,000	2,209,542,000	3,070,521,000	2,191,620,000	164,202,000	2,378,521,000	2,040,151,000	2,450,938,000
*LEVEL	* * *	* * *	* * *	* * *	*	* * *	* * *	* * *	* * *	* * *	* * *	* *	147.76	* * *	* *	* *
GPM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TIME	13:21	13:12	13:09	13:01	13:04	12:16	12:35	12:21	12:30	12:45	12:42	13:30	14:04	11:34	12:54	13:17
WELL	<u>п</u>	E-2-1	E-2-2	E-3-1	E-3-2	E-4	E-5	E-6	E-8	E-9	E-10	<u>П</u> -11	E-12	E-13	E-14	E-15

\* DEPTH TO WATER (BTC)

\*\*DOWNTIME IN MINUTES

\*\*\* TRANSDUCERS IN E-WELLS

POWER FLUCTUATION
 PREVENTATIVE MAINTENANCE
 CORRECTIVE MAINTENANCE

\*\*\*\* WELL OFFLINE FOR SYSTEM NON OPERATION TEST

MAY 31, 2005

AVG GPM PRESSURE DOWNTIME** REASON DOWN	* * *	***	* * *	***	* * *	***	* * *	***	* * *	က	* * *	***		* * *	* * *	* * *
DOWNTIME**	10040	9991	8666	9994	9994	10070	10066	10070	10067	10062	10068	10056	0	10063	9991	9666
PRESSURE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AVG GPM	0	0	0	0	0	0	0	0	0	0	0	0	0	103	0	0
WEEK'S TOTAL	0	0	0	0	0	0	0	0	0	0	0	0	0	6,000	0	0
*LEVEL GALLONS TO DATE	1,695,170,000	783,984,000	2,095,082,000	1,539,336,000	1,536,822,000	1,576,179,000	3,257,848,000	2,079,700,000	921,814,000	2,209,542,000	3,070,521,000	2,191,620,000	164,202,000	2,378,527,000	2,040,151,000	2,450,938,000
*LEVEL	* *	* * *	* * *	* * *	* *	* * *	* * *	* * *	* * *	* *	* * *	* *	147.76	* *	* *	*
GPM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TIME	12:41	11:43	11:47	11:35	11:38	12:06	12:21	12:11	12:17	12:27	12:30	13:06	13:13	11:17	11:25	11:53
WELL	H-1	E-2-1	E-2-2	E-3-1	E-3-2	E-4	E-5	E-6	ш 8	6-Э	E-10	<u>Б</u> -11	E-12	E-13	E-14	E-15

\* DEPTH TO WATER (BTC)

\*\*DOWNTIME IN MINUTES

\*\*\* TRANSDUCERS IN E-WELLS

\*\*\*\* WELL OFFLINE FOR SYSTEM NON OPERATION TEST

(1) POWER FLUCTUATION

(2) PREVENTATIVE MAINTENANCE(3) CORRECTIVE MAINTENANCE

REASON DOWN	* * *	***	* * *	****	***	***	***	* * *	***	3	* * *	**		**	** **	* * *	
PRESSURE DOWNTIME** RE	10064	10055	10048	10052	10052	10063	10065	10063	10065	10068	10062	10044	0	10043	10050	10053	
PRESSURE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
AVG GPM	0	0	0	0	0	0	0	0	0	0	0	0	0	103	0	0	
WEEK'S TOTAL	0	0	0	0	0	0	0	0	0	0	0	0	0	6,000	0	0	
*LEVEL GALLONS TO DATE	1,695,170,000	783,984,000	2,095,082,000	1,539,336,000	1,536,822,000	1,576,179,000	3,257,848,000	2,079,700,000	921,814,000	2,209,542,000	3,070,521,000	2,191,620,000	164,202,000	2,378,533,000	2,040,151,000	2,450,938,000	
*LEVEL	* *	* * *	* *	* *	* *	* * *	* *	*	* *	* *	* *	**	147.78	* *	* *	* *	
GPM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
TIME	12:25	11:18	11:15	11:07	11:10	11:49	12:06	11:54	12:02	12:15	12:12	12:30	13:02	11:40	10:55	11:26	
WELL	E-1	E-2-1	E-2-2	E-3-1	E-3-2	E-4	E-5	E-6	E-8	Е-9	E-10	<u>т</u>	E-12	E-13	E-14	E-15	

\*\*DOWNTIME IN MINUTES

\*\*\* TRANSDUCERS IN E-WELLS

\*\*\*\* WELL OFFLINE FOR SYSTEM NON OPERATION TEST

(2) PREVENTATIVE MAINTENANCE(3) CORRECTIVE MAINTENANCE

# **EXTRACTION WELL WEEKLY MONITORING** JUNE 14, 2005

PRESSURE DOWNTIME** REASON DOWN	***	* *	* * *	***	***	***	***	* * *	***	က	***	* * *		* * * *	* * * *	***
DOWNTIME**	10054	10096	10113	10100	10093	9992	9866	9991	2866	9984	9983	10022	0	0866	10095	10097
PRESSURE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AVG GPM	0	0	0	0	0	0	0	0	0	0	0	0	0	103	0	0
WEEK'S TOTAL	0	0	0	0	0	0	0	0	0	0	0	0	0	6,000	0	0
*LEVEL GALLONS TO DATE	1,695,170,000	783,984,000	2,095,082,000	1,539,336,000	1,536,822,000	1,576,179,000	3,257,848,000	2,079,700,000	921,814,000	2,209,542,000	3,070,521,000	2,191,620,000	164,202,000	2,378,539,000	2,040,151,000	2,450,938,000
*LEVEL	**	**	*	* *	* *	* *	* *	* *	* *	* *	* *	**	147.74	**	***	**
GPM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TIME	11:59	11:34	11:34	11:27	11:23	10:21	10:32	10:25	10:29	10:39	10:35	11:32	12:44	10:59	11:10	11:43
WELL	E-1	E-2-1	E-2-2	E-3-1	E-3-2	E-4	E-5	Б-6	Ш 8	6-Ш	E-10	E-11	E-12	E-13	E-14	E-15

\* DEPTH TO WATER (BTC)

\*\*DOWNTIME IN MINUTES

\*\*\* TRANSDUCERS IN E-WELLS

\*\*\*\* WELL OFFLINE FOR SYSTEM NON OPERATION TEST

POWER FLUCTUATION
 PREVENTATIVE MAINTENANCE
 CORRECTIVE MAINTENANCE

## **EXTRACTION WELL WEEKLY MONITORING** JUNE 21, 2005

AVG GPM PRESSURE DOWNTIME** REASON DOWN	***	**	***	***	* * *	***	***	* * *	* * *	r	* * *	***		**	***	***
DOWNTIME**	10084	10039	10032	10034	10041	10140	10152	10142	10148	10154	10154	10116	0	10034	10039	10040
PRESSURE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AVG GPM	0	0	0	0	0	0	0	0	0	0	0	0	0	103	0	0
WEEK'S TOTAL	0	0	0	0	0	0	0	0	0	0	0	0	0	6,000	0	0
*LEVEL GALLONS TO DATE	1,695,170,000	783,984,000	2,095,082,000	1,539,336,000	1,536,822,000	1,576,179,000	3,257,848,000	2,079,700,000	921,814,000	2,209,542,000	3,070,521,000	2,191,620,000	164,202,000	2,378,545,000	2,040,151,000	2,450,938,000
*LEVEL	**	* * *	* * *	* *	* *	* *	* *	* * *	* * *	* * *	* * *	* * *	147.72	* * *	* * *	* *
GPM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TIME	12:03	10:53	10:50	10:41	10:44	11:21	11:44	11:27	11:37	11:53	11:49	12:08	12:47	11:13	10:29	11:03
WELL	<u>F</u>	E-2-1	E-2-2	E-3-1	E-3-2	E-4	E-5	E-6	中.8	E-9	E-10	<del>П.</del> 11	E-12	E-13	E-14	E-15

<sup>\*</sup> DEPTH TO WATER (BTC)

<sup>\*\*</sup>DOWNTIME IN MINUTES

<sup>\*\*\*</sup> TRANSDUCERS IN E-WELLS

<sup>\*\*\*\*</sup> WELL OFFLINE FOR SYSTEM NON OPERATION TEST

<sup>(1)</sup> POWER FLUCTUATION

<sup>(2)</sup> PREVENTATIVE MAINTENANCE(3) CORRECTIVE MAINTENANCE

### JUNE 28, 2005

PRESSURE DOWNTIME** REASON DOWN	* * * *	* * *	* * *	* * *	* * * *	* * *	* * *	* * *	* * * *	က	* * *	* * *		* * *	***	* *
DOWNTIME**	10082	10128	10126	10122	10124	10020	10006	10004	10008	10006	10006	10120	0	10063	10120	10125
PRESSURE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AVG GPM	0	0	0	0	0	0	0	0	0	0	0	0	0	103	0	0
WEEK'S TOTAL	0	0	0	0	0	0	0	0	0	0	0	0	0	6,000	0	0
*LEVEL GALLONS TO DATE	1,695,170,000	783,984,000	2,095,082,000	1,539,336,000	1,536,822,000	1,576,179,000	3,257,848,000	2,079,700,000	921,814,000	2,209,542,000	3,070,521,000	2,191,620,000	164,202,000	2,378,551,000	2,040,151,000	2,450,938,000
*LEVEL	* *	**	*	* *	* *	***	* * *	* * *	**	* *	***	***	147.75	*	* *	* *
GPM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TIME	12:05	11:41	11:36	11:23	11:28	10:21	10:30	10:11	10:25	10:39	10:35	12:48	13:02	10:56	11:09	11:48
WELL	П	E-2-1	E-2-2	E-3-1	E-3-2	E-4	E-5	E-6	E- 8	E-9	E-10	E-11	E-12	E-13	E-14	E-15

<sup>\*</sup> DEPTH TO WATER (BTC)

<sup>\*\*</sup>DOWNTIME IN MINUTES

<sup>\*\*\*</sup> TRANSDUCERS IN E-WELLS

<sup>\*\*\*\*</sup> WELL OFFLINE FOR SYSTEM NON OPERATION TEST

<sup>(1)</sup> POWER FLUCTUATION(2) PREVENTATIVE MAINTENANCE(3) CORRECTIVE MAINTENANCE

### APPENDIX C

### WEEKLY INJECTION WELL MONITORING

Weeks of 12 January – 28 June 2005

## INJECTION WELL WEEKLY MONITORING **JANUARY 12, 2005**

AVE. GPM PRESSURE DOWNTIME** REASON DOWN	* *	* *	* *	* *	* *	* *	* *	* *	* *	* * *	* * *	* * *	**	
DOWNTIME**	11520	11520	11520	11520	11520	11520	11520	11520	11520	11520	11520	11520	11520	
PRESSURE	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	
AVE. GPM	0	0	0	0	0	0	0	0	0	0	0	0	0	
WEEK'S TOTAL	0	0	0	0	0	0	0	0	0	0	0	0	0	
GALLONS TO DATE	375,995,000	398,161,000	219,020,000	2,939,341,000	51,686,000	25,403,000	5,294,612,000	2,526,411,000	3,092,976,000	3,239,380,000	2,107,248,000	1,435,459,000	936,119,000	
GPM *LEVEL		204.22	177.31	161.45	139.03	217.33	116.38	123.40	123.69	134.97	161.19		208.89	
GPM	0	0	0	0	0	0	0	0	0	0	0	0	0	
TIME	14:26	16:12	16:03	15:53	15:45	15:38	15:10	15:15	15:21	15:28	14:46	14:42	14:36	
WELL	-	1-2	<u>-</u> 3	1-4	1-5	9-1	1-7	l-8	6-1	1-10	-	1-12	1-13	

\* DEPTH TO WATER (BTC)

\*\*DOWNTIME IN MINUTES

\*\*\* WELL OFFLINE FOR SYSTEM NON OPERATION TEST

(1) POWER FLUCTUATION(2) PREVENTATIVE MAINTENANCE(3) CORRECTIVE MAINTENANCE

## INJECTION WELL WEEKLY MONITORING JANUARY 19, 2005

\* DEPTH TO WATER (BTC)

\*\*DOWNTIME IN MINUTES

\*\*\* WELL OFFLINE FOR SYSTEM NON OPERATION TEST

(1) POWER FLUCTUATION

(2) PREVENTATIVE MAINTENANCE(3) CORRECTIVE MAINTENANCE

## INJECTION WELL WEEKLY MONITORING **JANUARY 25, 2005**

gay (44, 34)	Γ		·	Т		r	r	T	·		r		
AVE. GPM   PRESSURE   DOWNTIME**   REASON DOWN	* *	* *	* *	* *	* *	* *	* *	* *	* *	* *	* *	* *	* *
DOWNTIME**	8640	8640	8640	8640	8640	8640	8640	8640	8640	8640	8640	8640	8640
PRESSURE	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0
AVE. GPM	0	0	0	0	0	0	0	0	0	0	0	0	0
WEEK'S TOTAL	0	0	0	0	0	0	0	0	0	0	0	0	0
GALLONS TO DATE	375,995,000	398,161,000	219,020,000	2,939,341,000	51,686,000	25,403,000	5,294,612,000	2,526,411,000	3,092,976,000	3,239,380,000	2,107,248,000	1,435,459,000	936,119,000
*LEVEL		204.24	177.26	161.40	139.00	127.32	116.02	123.72	123.51	134.81	161.21		208.98
MdĐ	0	0	0	0	0	0	0	0	0	0	0	0	0
TIME	13:21	14:28	14:23	14:19	14:14	14:10	14:06	14:01	13:55	13:51	13:35	13:30	13:26
WELL	-	1-2	1-3	1-4	1-5	9-1	<b>L-1</b>	8-1	6-1	1-10	1-11	1-12	1-13

\* DEPTH TO WATER (BTC)

\*\* DOWNTIME IN MINUTES

\*\*\* WELL OFFLINE FOR SYSTEM NON OPERATION TEST

(1) POWER FLUCTUATION(2) PREVENTATIVE MAINTENANCE(3) CORRECTIVE MAINTENANCE

# INJECTION WELL WEEKLY MONITORING FEBRUARY 1, 2005

Z		I									I		
REASON DOV	* *	* * *	* *	* *	* * *	* *	* *	* * *	* *	*	* *	* *	* *
DOWNTIME**	10080	10080	10080	10080	10080	10080	10080	10080	10080	10080	10080	10080	10080
PRESSURE	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0
AVE. GPM	0	0	0	0	0	0	0	0	0	0	0	0	0
WEEK'S TOTAL AVE. GPM PRESSURE DOWNTIME** REASON DOWN	0	0	0	0	0	0	0	0	0	0	0	0	0
GPM *LEVEL GALLONS TO DATE	375,995,000	398,161,000	219,020,000	2,939,341,000	51,686,000	25,403,000	5,294,612,000	2,526,411,000	3,092,976,000	3,239,380,000	2,107,248,000	1,435,459,000	936,119,000
*LEVEL		204.20	177.30	161.38	138.96	127.29	116.00	123.68	123.47	134.92	161.17		209.02
GPM	0	0	0	0	0	0	0	0	0	0	0	0	0
TIME	11:52	13:02	13:10	13:18	13:27	13:36	14:00	14:08	14:20	14:28	12:14	12:19	12:24
WELL		1-2	1-3	1-4	1-5	1-6	L-1	8-1	6-1	1-10	1-11	1-12	1-13

<sup>\*</sup> DEPTH TO WATER (BTC)

<sup>\*\*</sup>DOWNTIME IN MINUTES

<sup>\*\*\*</sup> WELL OFFLINE FOR SYSTEM NON OPERATION TEST

<sup>(1)</sup> POWER FLUCTUATION

<sup>(2)</sup> PREVENTATIVE MAINTENANCE(3) CORRECTIVE MAINTENANCE

## INJECTION WELL WEEKLY MONITORING FEBRUARY 8, 2005

REASON DOWN	* * *	* *	* * *	* *	**	* * *	* * *	* *	* *	* *	* * *	* *	**
AVE. GPM PRESSURE DOWNTIME**	7870	7870	7870	7870	7870	7870	7870	7870	7870	7870	7870	7870	7870
PRESSURE	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0
AVE. GPM	0	0	0	0	9	0	74	2	118	282	0	0	0
WEEK'S TOTAL	0	0	0	0	14,000	0	158,000	4,000	253,000	604,000	0	0	0
*LEVEL GALLONS TO DATE	375,995,000	398,161,000	219,020,000	2,939,341,000	51,700,000	25,403,000	5,294,770,000	2,526,415,000	3,093,229,000	3,239,984,000	2,107,248,000	1,435,459,000	936,119,000
*LEVEL		204.14	177.27	161.35	139.10	74.92	105.15	119.85	80.05	20.75	161.10		209.02
GPM	0	0	0	0	0	0	50	30	180	460	0	0	0
TIME	12:19	14:00	13:53	13:45	13:37	13:30	12:58	13:05	13:14	13:21	12:37	12:34	12:29
WELL	1	1-2	1-3	1-4	2	9-1	<u> </u>	8-1	6-1	1-10	1-11	1-12	1-13

<sup>\*</sup> DEPTH TO WATER (BTC)

<sup>\*\*</sup>DOWNTIME IN MINUTES

<sup>\*\*\*</sup> WELL OFFLINE FOR SYSTEM NON OPERATION TEST

<sup>(1)</sup> POWER FLUCTUATION

<sup>(2)</sup> PREVENTATIVE MAINTENANCE(3) CORRECTIVE MAINTENANCE

## INJECTION WELL WEEKLY MONITORING FEBRUARY 15, 2005

TIME   CPM	טים		* = \( \mathcal{E} \)	CALLONG TO DATE	MEELICTOTAL	AVC COM			
	ן נו נו	ן נו נו	GALLONS 10	30000	WEERSIOIAL	AVE. GPIM	PHESSURE	DOWNINE	AVE. GPM PRESSORE DOWN! IME REASON DOWN
11:56 0 375,995,000		375,995,00	375,995,00	8	0	0	0/0	6499	* * *
13:34 0 203.98 398,161,000	203.98		398,161,00	8	0	0	0/0	6499	* *
13:28 0 177.23 219,020,00	177.23		219,020,0	00	0	0	0/0	6499	**
13:22 0 161.37 2,939,341,0	161.37		2,939,341	000,	0	0	0/0	6499	* *
13:16 0 139.29 51,881,000	139.29		51,881,(	000	181,000	51	0/0	6499	* * *
13:10 0 127.36 25,403,00	127.36		25,403,0	000	0	0	0/0	6499	* *
12:44 0 116.18 5,295,239,	116.18		5,295,239	000,	469,000	131	0/0	6499	* * *
12:50 0 123.73 2,526,223,000	123.73		2,526,223,	000	0	0	0/0	6499	* *
12:56 0 123.38 3,093,979,000	123.38		3,093,979	,000	750,000	210	0/0	6499	* *
13:01 0 134.97 3,241,709,000	134.97		3,241,709	,000	1,725,000	484	0/0	6499	* *
12:12 0 161.18 2,107,248,000	161.18		2,107,248	000	0	0	0/0	6499	* *
12:19 0 1,435,459,000		1,435,459	1,435,459	000,	0	0	0/0	6499	* *
12:03 0 209.07 936,119,000	209.07		936,119	000	0	0	0/0	6499	*
						-	¥*************************************	-	

<sup>\*</sup> DEPTH TO WATER (BTC)

<sup>\*\*</sup>DOWNTIME IN MINUTES

<sup>\*\*\*</sup> WELL OFFLINE FOR SYSTEM NON OPERATION TEST

<sup>(1)</sup> POWER FLUCTUATION

<sup>(2)</sup> PREVENTATIVE MAINTENANCE(3) CORRECTIVE MAINTENANCE

## INJECTION WELL WEEKLY MONITORING FEBRUARY 22, 2005

_	·										,			
AVE. GPM PRESSURE DOWNTIME** REASON DOWN	***	**	**	* * *	***	***	* *	**	***	**	**	**	***	
DOWNTIME**	10080	10080	10080	10080	10080	10080	10080	10080	10080	10080	10080	10080	10080	
PRESSURE	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	
AVE. GPM	0	0	0	0	0	0	0	0	0	0	0	0	0	
WEEK'S TOTAL	0	0	0	0	0	0	0	0	0	0	0	0	0	
*LEVEL GALLONS TO DATE	375,995,000	398,161,000	219,020,000	2,939,341,000	51,881,000	25,403,000	5,295,239,000	2,526,223,000	3,093,979,000	3,241,709,000	2,107,248,000	1,435,459,000	936,119,000	
*LEVEL		204.21	177.31	161.38	139.18	127.32	116.25	123.69	123.48	135.02	161.12		209.00	
GPM	0	0	0	0	0	0	0	0	0	0	0	0	0	
TIME	12:38	14:03	13:59	13:55	13:51	13:45	13:40	13:33	13:28	13:22	12:57	12:53	12:48	1
WELL	-	1-2	1-3	1-4	1-5	9-1	1-7	<u>8-</u>	6-1	1-10	-11	1-12	1-13	

<sup>\*</sup> DEPTH TO WATER (BTC)

<sup>\*\*</sup>DOWNTIME IN MINUTES

<sup>\*\*\*</sup> WELL OFFLINE FOR SYSTEM NON OPERATION TEST

<sup>(1)</sup> POWER FLUCTUATION

<sup>(2)</sup> PREVENTATIVE MAINTENANCE(3) CORRECTIVE MAINTENANCE

## INJECTION WELL WEEKLY MONITORING **MARCH 1, 2005**

															,
	AVE. GPM PRESSURE DOWNTIME** REASON DOWN	* *	* * *	* *	**	**	**	* *	**	**	**	*	* * *	* **	
	DOWNTIME**	10080	10080	10080	10080	10080	10080	10080	10080	10080	10080	10080	10080	10080	
	PRESSURE	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	
	AVE. GPM	0	0	0	0	0	0	0	0	0	0	0	0	0	
	WEEK'S TOTAL	0	0	0	0	0	0	0	0	0	0	0	0	0	
	GALLONS TO DATE	375,995,000	398,161,000	219,020,000	2,939,341,000	51,881,000	25,403,000	5,295,239,000	2,526,553,000	3,093,979,000	3,241,709,000	2,107,248,000	1,435,459,000	936,119,000	
	"LEVEL		204.18	177.28	161.37	139.12	127.30	116.28	123.70	123.51	134.96	161.19		208.97	
100	SPIN	0	0	0	0	0	0	0	0	0	0	0	0	0	
	IME	10:46	12:33	12:27	12:18	12:11	12:04	11:41	11:47	11:50	11:56	11:10	11:05	10:59	() HG;
	WELL	-	1-2	<u>6-1</u>	4-1	1-5	9-1	1-7	<u>~</u>	6-1	1-10	<u>-</u>	1-12	I-13	() Ha/ () Hall () +

\* DEPTH TO WATER (BTC)

\*\*DOWNTIME IN MINUTES

\*\*\* WELL OFFLINE FOR SYSTEM NON OPERATION TEST

(1) POWER FLUCTUATION

# INJECTION WELL WEEKLY MONITORING MARCH 8, 2005

TIME		GPM	*LEVEL	*LEVEL GALLONS TO DATE	WEEK'S TOTAL	AVE GPM		PRESSURE DOWNTIME**	REASON DOWN
0	2				0	0		10080	***
13:38 0 204.00		204.00	I _]	398,161,000	0	0	0/0	10080	* *
13:33 0 176.85		176.85	I	219,020,000	0	0	0/0	10080	* *
13:29 0 161.02		161.02	1	2,939,341,000	0	0	0/0	10080	***
13:24 0 139.16		139.16	T	51,881,000	0	0	0/0	10080	* *
13:19 0 127.32		127.32		25,403,000	0	0	0/0	10080	* *
13:13 0 116.26		116.26		5,295,239,000	0	0	0/0	10080	* *
13:06 0 123.72		123.72		2,526,553,000	0	0	0/0	10080	* *
12:58 0 123.50		123.50		3,093,979,000	0	0	0/0	10080	* *
12:52 0 134.98		134.98		3,241,709,000	0	0	0/0	10080	**
12:21 0 161.15		161.15		2,107,248,000	0	0	0/0	10080	**
12:14 0	0		Г	1,435,459,000	0	0	0/0	10080	**
12:08 0 209.02		209.02	- 7	936,119,000	0	0	0/0	10080	* *
* DEPTH TO WATER (BTC)					MOLENI FOLLIFI GRANCO (F)				-

DEPTH TO WATER (BTC)

\*\*DOWNTIME IN MINUTES

\*\*\* WELL OFFLINE FOR SYSTEM NON OPERATION TEST

(1) POWER FLUCTUATION

## INJECTION WELL WEEKLY MONITORING **MARCH 15, 2005**

	Γ	Т		T	ı	T	Ι	·	T	T T	Γ	Γ	T	7
AVE. GPM PRESSURE DOWNTIME** REASON DOWN	***	***	***	* * *	***	* * *	* * *	* * *	* * *	***	* * *	* * *	* * *	
DOWNTIME**	10080	10080	10080	10080	10080	10080	10080	10080	10080	10080	10080	10080	10080	Y
PRESSURE	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	
AVE. GPM	0	0	0	0	0	0	0	0	0	0	0	0	0	
WEEK'S TOTAL	0	0	0	0	0	0	0	0	0	0	0	0	0	
GALLONS TO DATE	375,995,000	398,161,000	219,020,000	2,939,341,000	51,881,000	25,403,000	5,295,239,000	2,526,553,000	3,093,979,000	3,241,709,000	2,107,248,000	1,435,459,000	936,119,000	
*LEVEL		203.91	177.03	161.10	178.39	127.08	117.76	123.52	123.46	135.00	161.17		208.71	
GPM	0	0	0	0	0	0	0	0	0	0	0	0	0	
TIME	12:12	13:07	13:11	13:19	13:23	13:27	12:40	12:47	12:51	12:57	13:51	13:46	13:40	Ó Hay
WELL	1	1-2	1-3	1-4	1-5	9-1	1-7	8-1	6-1	1-10	1-11	1-12	L-13	

DEPTH TO WATER (BTC)

\*\*DOWNTIME IN MINUTES

\*\*\* WELL OFFLINE FOR SYSTEM NON OPERATION TEST

(1) POWER FLUCTUATION

## INJECTION WELL WEEKLY MONITORING MARCH 22, 2005

N N														
AVE. GPM PRESSURE DOWNTIME** REASON DOWN	* *	* *	* * *	***	* * *	***	***	***	* * *	* * *	***	**	* * *	
DOWNTIME**	10080	10080	10080	10080	10080	10080	10080	10080	10080	10080	10080	10080	10080	
PRESSURE	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	<u> </u>
AVE. GPM	0	0	0	0	0	0	0	0	0	0	0	0	0	
WEEK'S TOTAL	0	0	0	0	0	0	0	0	0	0	0	0	0	
GALLONS TO DATE	375,995,000	398,161,000	219,020,000	2,939,341,000	51,881,000	25,403,000	5,295,239,000	2,526,553,000	3,093,979,000	3,241,709,000	2,107,248,000	1,435,459,000	936,119,000	
*LEVEL		204.02	176.92	161.00	138.68	126.98	116.51	123.31	123.54	134.95	160.80		208.81	
GPM	0	0	0	0	0	0	0	0	0	0	0	0	0	
TIME	14:29	14:05	14:03	14:00	13:57	13:53	13:40	13:44	13:47	13:49	13:26	13:19	13:15	(CHO)
WELL	<u>-</u>	1-2	E-l	4-1	1-5	9-1	1-7	<u>8-</u>	6-1	1-10	<u>-</u>	1-12	1-13	CHU, CHU, CHU, CHU, CHU, CHU, CHU, CHU,

<sup>\*</sup> DEPTH TO WATER (BTC)

<sup>\*\*</sup>DOWNTIME IN MINUTES

<sup>\*\*\*</sup> WELL OFFLINE FOR SYSTEM NON OPERATION TEST

<sup>(1)</sup> POWER FLUCTUATION

<sup>(2)</sup> PREVENTATIVE MAINTENANCE(3) CORRECTIVE MAINTENANCE

## INJECTION WELL WEEKLY MONITORING MARCH 29, 2005

														1
REASON DOWN	* *	* * *	* * *	* *	* *	* *	***	* *	* **	* * *	* *	**	* *	
DOWNTIME**	10062	10062	10062	10062	10062	10062	10062	10062	10062	10062	10062	10062	10062	
AVE. GPM PRESSURE	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	
AVE. GPM	0	0	0	0	0	0	0	0	0	0	0	0	0	
WEEK'S TOTAL	0	0	0	0	0	0	0	0	0	0	0	0	0	
GALLONS TO DATE	375,995,000	398,161,000	219,020,000	2,939,341,000	51,881,000	25,403,000	5,295,239,000	2,526,553,000	3,093,979,000	3,241,709,000	2,107,248,000	1,435,459,000	936,119,000	
*LEVEL		203.85	176.71	161.08	138.74	127.18	115.74	123.47	123.81	135.03	160.98		208.90	
GPM	0	0	0	0	0	0	0	0	0	0	0	0	0	
TIME	13:11	9:45	9:49	9:54	9:59	10:10	10:16	10:21	10:26	10:30	13:48	13:40	13:31	(C) (C)
WELL	1	1-2	F-1	<b>1-</b> 4	-5	9-1	1-7	8-1	6-1	1-10	-	1-12	1-13	CHO CLEVIN CE I HOUGH

DEPTH TO WATER (BTC)

<sup>\*\*</sup>DOWNTIME IN MINUTES

<sup>\*\*\*</sup> WELL OFFLINE FOR SYSTEM NON OPERATION TEST

<sup>(1)</sup> POWER FLUCTUATION

<sup>(2)</sup> PREVENTATIVE MAINTENANCE(3) CORRECTIVE MAINTENANCE

## INJECTION WELL WEEKLY MONITORING **APRIL 6, 2005**

,	·						-							_
PRESSURE DOWNTIME** REASON DOWN	***	* * *	**	* *	***	* * *	**	***	***	* * *	* *	**	* *	
DOWNTIME**	0	0	0	0	0	0	0	0	0	0	0	0	0	
12.000000000000000000000000000000000000	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	
AVE. GPM	0	0	0	0	0	0	0	0	0	0	0	0	0	
WEEK'S TOTAL	0	0	0	0	0	0	0	0	0	0	0	0	0	
GALLONS TO DATE	375,995,000	398,161,000	219,020,000	2,939,341,000	51,881,000	25,403,000	5,295,239,000	2,526,553,000	3,093,979,000	3,241,709,000	2,107,248,000	1,435,459,000	936,119,000	
*LEVEL		203.98	176.90	161.05	138.82	127.23	116.02	123.52	123.74	135.12	160.86		208.97	
GPM	0	0	0	0	0	0	0	0	0	0	0	0	0	
TIME	11:22	13:18	13:12	13:05	13:00	12:52	12:46	12:38	12:32	12:25	11:48	11:42	11:36	(CFa) a
WELL		1-2	1-3	1-4	1-5	9-1	1-7	<u>&amp;-</u>	6-1	1-10	<del>1</del>	1-12	1-13	(OTG) GET WATER

DEPTH TO WATER (BTC)

<sup>\*\*</sup>DOWNTIME IN MINUTES

<sup>\*\*\*</sup> WELL OFFLINE FOR SYSTEM NON OPERATION TEST

<sup>(1)</sup> POWER FLUCTUATION

<sup>(2)</sup> PREVENTATIVE MAINTENANCE (3) CORRECTIVE MAINTENANCE

# INJECTION WELL WEEKLY MONITORING **APRIL 12, 2005**

I DOWN	* *	* *	**	***	**	***	**	**	***	*	* * *	*	* *	
REASON	*	**	*	*	*	*	*	*	*	**	*	***	*	
AVE. GPM PRESSURE DOWNTIME** REASON DOWN	8640	8640	8640	8640	8640	8640	8640	8640	8640	8640	8640	8640	8640	
PRESSURE	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	
AVE. GPM	0	0	0	0	0	0	0	0	0	0	0	0	0	
WEEK'S TOTAL	0	0	0	0	0	0	0	0	0	0	0	0	0	(1) POWER FLUCTUATION
GPM *LEVEL GALLONS TO DATE	375,995,000	398,161,000	219,020,000	2,939,341,000	51,881,000	25,403,000	5,295,239,000	2,526,553,000	3,093,979,000	3,241,709,000	2,107,248,000	1,435,459,000	936,119,000	
*LEVEL		203.90	176.76	161.02	138.80	127.25	115.83	123.50	123.84	135.15	160.83		209.04	
GPM	0	0	0	0	0	0	0	0	0	0	0	0	0	
TIME	11:44	13:41	13:34	13:27	13:20	13:13	13:06	13:00	12:52	12:45	12:10	12:06	11:59	(BTC)
WELL	-	1-2	l-3	1-4	1-5	9-1	1-7	l-8	6-1	1-10		1-12	1-13	* DEPTH TO WATER (BTC)

\*\*DOWNTIME IN MINUTES

\*\*\* WELL OFFLINE FOR SYSTEM NON OPERATION TEST

# INJECTION WELL WEEKLY MONITORING **APRIL 19, 2005**

WELL	TIME	GPM	*LEVEL	GPM *LEVEL GALLONS TO DATE	WEEK'S TOTAL	AVE. GPM	PRESSURE	DOWNTIME**	AVE. GPM PRESSURE DOWNTIME** REASON DOWN
1	11:40	0		375,995,000	0	0	0/0	10080	**
1-2	13:50	0	203.70	398,161,000	0	0	0/0	10080	* * *
1-3	13:44	0	176.88	219,020,000	0	0	0/0	10080	**
4-1	13:37	0	160.87	2,939,341,000	0	0	0/0	10080	**
1-5	13:31	0	138.77	51,881,000	0	0	0/0	10080	**
9-1	13:26	0	127.21	25,403,000	0	0	0/0	10080	**
1-7	13:02	0	115.94	5,295,239,000	0	0	0/0	10080	***
<u>&amp;-</u>	13:07	0	123.51	2,526,553,000	0	0	0/0	10080	**
6-1	13:13	0	123.78	3,093,979,000	0	0	0/0	10080	***
1-10	13:18	0	135.09	3,241,709,000	0	0	0/0	10080	**
-	12:08	0	160.92	2,107,248,000	0	0	0/0	10080	* *
1-12	12:01	0		1,435,459,000	0	0	0/0	10080	* *
1-13	11:56	0	208.52	936,119,000	0	0	0/0	10080	* * *
TOTAL DEPTH TO WATER	(OTa) c								

<sup>\*</sup> DEPTH TO WATER (BTC)

<sup>\*\*</sup>DOWNTIME IN MINUTES

<sup>\*\*\*</sup> WELL OFFLINE FOR SYSTEM NON OPERATION TEST

<sup>(2)</sup> PREVENTATIVE MAINTENANCE(3) CORRECTIVE MAINTENANCE

# INJECTION WELL WEEKLY MONITORING APRIL 26, 2005

NMOC											-			
REASON DOWN	* *	* *	* *	* *	* *	* *	* *	* *	* *	* *	* * *	* *	* *	
DOWNTIME**	10080	10080	10080	10080	10080	10080	10080	10080	10080	10080	10080	10080	10080	
AVE. GPM PRESSURE	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	
AVE. GPM	0	0	0	0	0	0	0	0	0	0	0	0	0	
WEEK'S TOTAL	0	0	0	0	0	0	0	0	0	0	0	0	0	(1) BOWER ELLICTITATION
GPM *LEVEL GALLONS TO DATE	375,995,000	398,161,000	219,020,000	2,939,341,000	51,881,000	25,403,000	5,295,239,000	2,526,553,000	3,093,979,000	3,241,709,000	2,107,248,000	1,435,459,000	936,119,000	
*LEVEL		203.78	176.90	160.94	138.76	127.24	116.00	123.51	123.80	135.12	160.89		208.73	
GPM	0	0	0	0	0	0	0	0	0	0	0	0	0	
TIME	12:09	13:52	13:46	13:39	13:34	13:28	13:24	13:18	13:14	13:08	12:25	12:20	12:14	(CTa)
WELL	Ξ.	1-2	F-3	1-4	1-5	9-1	1-7	l-8	6-1	1-10	1-11	1-12	L-13	CTa) GBTA/W OT HTGBG *

\* DEPTH TO WATER (BTC)

\*\*DOWNTIME IN MINUTES

\*\*\* WELL OFFLINE FOR SYSTEM NON OPERATION TEST

(1) POWER FLUCTUATION

### MAY 3, 2005

Z														]
REASON DOWN	* *	* *	* *	* *	* *	* *	* *	* *	* *	* *	***	* *	* *	
PRESSURE DOWNTIME**	10080	10080	10080	10080	10080	10080	10080	10080	10080	10080	10080	10080	10080	
PRESSURE	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	
AVE. GPM	0	0	0	0	0	0	0	0	0	0	0	0	0	
WEEK'S TOTAL	0	0	0	0	0	0	0	0	12,000	1,000	0	0	0	
GALLONS TO DATE	375,995,000	398,161,000	219,020,000	2,939,341,000	51,881,000	25,403,000	5,295,239,000	2,526,553,000	3,093,991,000	3,241,710,000	2,107,248,000	1,435,459,000	936,119,000	
*LEVEL		203.76	176.64	161.00	138.81	127.27	115.61	123.77	123.40	134.35	161.26		208.81	
GPM	0	0	0	0	0	0	0	0	0	0	0	0	0	
TIME	11:55	13:42	13:35	13:28	13:21	13:14	12:44	12:49	12:54	13:00	12:21	12:15	12:08	(OFa)
WELL		1-2	1-3	1-4	1-5	9-1	1-7	8-	6-1	1-10		1-12	1-13	(OTA) GBTA/W OT HTGBO *

DEPTH TO WATER (BTC)

\*\*DOWNTIME IN MINUTES

\*\*\* WELL OFFLINE FOR SYSTEM NON OPERATION TEST

(1) POWER FLUCTUATION

MAY 10, 2005

Z														]
DOWNTIME** REASON DOWN	* *	* * *	* *	* *	**	* *	* *	* *	* *	* *	**	**	* *	
DOWNTIME**	7848	7848	7848	7848	7848	7848	7848	7848	7848	7848	7848	7848	7848	
AVE. GPM PRESSURE	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	
AVE. GPM	0	0	0	0	0	0	9/	0	107	264	0	0	0	
WEEK'S TOTAL	0	0	0	0	1,000	0	176,000	0	247,000	606,000	0	0	0	
*LEVEL GALLONS TO DATE	375,995,000	398,161,000	219,020,000	2,939,341,000	51,882,000	25,403,000	5,295,415,000	2,526,553,000	3,094,238,000	3,242,316,000	2,107,248,000	1,435,459,000	936,119,000	
*LEVEL		203.74	175.98	160.25	137.50	83.00	105.80	120.75	80.10	20.05	161.08		209.02	
GPM	0	0	0	0	0	0	50	0	180	450	0	0	0	
TIME	12:51	14:51	14:42	14:36	14:31	14:26	14:20	14:14	14:08	14:02	13:18	13:14	13:08	()+0
WELL	-	1-2	1-3	1-4	1-5	9-1	1-7	8-	6-1	1-10	-	1-12	I-13	OHO, GHEANN OF LITCHON

<sup>\*\*</sup>DOWNTIME IN MINUTES

<sup>\*\*\*</sup> WELL OFFLINE FOR SYSTEM NON OPERATION TEST

<sup>(1)</sup> POWER FLUCTUATION

<sup>(2)</sup> PREVENTATIVE MAINTENANCE

<sup>(3)</sup> CORRECTIVE MAINTENANCE

### MAY 17, 2005

AVE. GPM PRESSURE DOWNTIME** REASON DOWN	**	**	**	**	**	**	**	**	**	**	**	**	* * *	
DOWNTIME**	6540	6540	6540	6540	6540	6540	6540	6540	6540	6540	6540	6540	6540	
PRESSURE	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	
AVE. GPM	0	0	0	0	0	0	150	0	205	496	0	0	0	
WEEK'S TOTAL	0	0	0	0	0	0	519,000	1,000	714,000	1,734,000	0	0	0	
GPM *LEVEL GALLONS TO DATE	375,995,000	398,161,000	219,020,000	2,939,341,000	51,882,000	25,403,000	5,295,934,000	2,526,554,000	3,094,952,000	3,244,050,000	2,107,248,000	1,435,459,000	936,119,000	
*LEVEL		203.81	176.71	161.08	138.80	127.17	115.72	123.74	123.28	134.71	161.23		208.87	
GPM	0	0	0	0	0	0	0	0	0	0	0	0	0	
TIME	11:44	14:02	13:55	13:49	13:43	13:37	13:06	13:11	13:16	13:21	12:19	12:14	12:08	() H
WELL	-	1-2	1-3	1-4	1-5	9-1	1-7	8-I	6-1	1-10	-1	1-12	1-13	() H () () H () H () H () H () H () H (

DEPTH TO WATER (BTC)

\*\*DOWNTIME IN MINUTES

\*\*\* WELL OFFLINE FOR SYSTEM NON OPERATION TEST

(1) POWER FLUCTUATION

### MAY 24, 2005

WELL	TIME	GPM	*LEVEL	GPM *LEVEL GALLONS TO DATE	WEEK'S TOTAL	AVE. GPM	PRESSURE	DOWNTIME**	AVE. GPM PRESSURE DOWNTIME** REASON DOWN
-	13:25	0		375,995,000	0	0	0/0	10080	* *
1-2	15:10	0	203.92	398,161,000	0	0	0/0	10080	* *
<del>۲</del> -3	15:03	0	176.68	219,020,000	0	0	0/0	10080	* *
1-4	14:57	0	161.04	2,939,341,000	0	0	0/0	10080	* *
-5	14:50	0	138.84	51,882,000	0	0	0/0	10080	* *
9-1	14:44	0	127.24	25,403,000	0	0	0/0	10080	* *
1-7	14:37	0	115.78	5,295,934,000	0	0	0/0	10080	**
8-1	14:31	0	123.62	2,526,554,000	0	0	0/0	10080	* *
6-1	14:25	0	123.32	3,094,952,000	0	0	0/0	10080	* *
1-10	14:17	0	134.62	3,244,050,000	0	0	0/0	10080	* *
<u>-</u>	13:47	0	161.26	2,107,248,000	0	0	0/0	10080	* *
1-12	13:42	0		1,435,459,000	0	0	0/0	10080	* *
1-13	13:36	0	208.84	936,119,000	0	0	0/0	10080	* *
* DEPTH TO WATER (BTC)	G (BTC)								

DEPTH TO WATER (BTC)

<sup>\*\*</sup>DOWNTIME IN MINUTES

<sup>\*\*\*</sup> WELL OFFLINE FOR SYSTEM NON OPERATION TEST

<sup>(2)</sup> PREVENTATIVE MAINTENANCE (3) CORRECTIVE MAINTENANCE

MAY 31, 2005

G. J., 1916.	T	Ţ	T	T	т	T	T	T	T	T	T	Τ	T	7
AVE. GPM PRESSURE DOWNTIME** REASON DOWN	* * *	* * *	***	***	***	* * *	* * *	* * *	* * *	***	* * *	* * *	* *	
DOWNTIME**	10080	10080	10080	10080	10080	10080	10080	10080	10080	10080	10080	10080	10080	
PRESSURE	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	
AVE. GPM	0	0	0	0	0	0	0	0	0	0	0	0	0	
WEEK'S TOTAL	0	0	0	0	0	0	0	0	0	0	0	0	0	(1) POWER FLUCTUATION
GALLONS TO DATE	375,995,000	398,161,000	219,020,000	2,939,341,000	51,882,000	25,403,000	5,295,934,000	2,526,554,000	3,094,952,000	3,244,050,000	2,107,248,000	1,435,459,000	936,119,000	
GPW *LEVEL		203.88	176.69	161.11	138.85	127.15	115.74	123.78	123.38	134.60	161.30		208.86	
GPM	0	0	0	0	0	0	0	0	0	0	0	0	0	
TIME	12:37	14:05	13:59	13:53	13:48	13:43	13:20	13:25	13:29	13:35	12:58	12:54	12:49	(BTC)
WELL	-	1-2	1-3	1-4	1-5	9-1	1-7	8-1	6-1	l-10	-	1-12	1-13	* DEPTH TO WATER (BTC)

<sup>\*\*</sup>DOWNTIME IN MINUTES

<sup>\*\*\*</sup> WELL OFFLINE FOR SYSTEM NON OPERATION TEST

<sup>(1)</sup> POWER FLUCTUATION

<sup>(2)</sup> PREVENTATIVE MAINTENANCE (3) CORRECTIVE MAINTENANCE

WELL	TIME	GPM	*LEVEL	GPM *LEVEL GALLONS TO DATE	WEEK'S TOTAL	AVE. GPM	PRESSURE	PRESSURE DOWNTIME**	REASON DOWN
	12:22	0		375,995,000	0	0	0/0	10080	* * *
1-2	14:02	0	203.84	398,161,000	0	0	0/0	10080	* *
ဇ-	13:59	0	176.71	219,020,000	0	0	0/0	10080	* *
1-4	13:52	0	161.16	2,939,341,000	0	0	0/0	10080	* *
1-5	13:46	0	138.86	51,882,000	0	0	0/0	10080	* *
9-1	13:40	0	127.18	25,403,000	0	0	0/0	10080	* *
1-7	13:35	0	115.75	5,295,934,000	0	0	0/0	10080	* *
8-1	13:28	0	123.72	2,526,554,000	0	0	0/0	10080	* * *
6-1	13:22	0	123.34	3,094,952,000	0	0	0/0	10080	* * *
I-10	13:16	0	134.64	3,244,050,000	0	0	0/0	10080	* *
<del>-</del>	12:46	0	161.28	2,107,248,000	0	0	0/0	10080	***
1-12	12:42	0		1,435,459,000	0	0	0/0	10080	***
-13	12:36	0	208.82	936,119,000	0	0	0/0	10080	* * *
* DEPTH TO WATER (BTC)	:B (BTC)				MOITALITALITALION				

DEPTH TO WATER (BTC)

\*\*DOWNTIME IN MINUTES

\*\*\* WELL OFFLINE FOR SYSTEM NON OPERATION TEST

(1) POWER FLUCTUATION

# INJECTION WELL WEEKLY MONITORING JUNE 14, 2005

WELL	TIME	GPM	GPM *LEVEL	GALLONS TO DATE	WEEK'S TOTAL	AVE. GPM	PRESSURE	DOWNTIME**	AVE. GPM PRESSURE DOWNTIME** REASON DOWN
:	11:54	0		375,995,000	0	0	0/0	10080	***
1-2	12:57	0	203.90	398,161,000	0	0	0/0	10080	* * *
F-1	13:09	0	176.74	219,020,000	0	0	0/0	10080	* *
1-4	13:16	0	161.19	2,939,341,000	0	0	0/0	10080	* *
1-5	13:23	0	138.84	51,882,000	0	0	0/0	10080	* *
9-	13:31	0	127.19	25,403,000	0	0	0/0	10080	* *
1-7	14:05	0	115.73	5,295,934,000	0	0	0/0	10080	* *
8-1	13:57	0	123.77	2,526,554,000	0	0	0/0	10080	**
6-1	13:50	0	123.37	3,094,952,000	0	0	0/0	10080	***
I-10	13:43	0	134.68	3,244,050,000	0	0	0/0	10080	* *
=	12:22	0	161.31	2,107,248,000	0	0	0/0	10080	* *
1-12	12:14	0		1,435,459,000	0	0	0/0	10080	* *
l-13	12:06	0	208.84	936,119,000	0	0	0/0	10080	* * *
* DEPTH TO WATER (BTC)	A (BTC)			)	(1) POWER FLUCTUATION				

\*\*DOWNTIME IN MINUTES

\*\*\* WELL OFFLINE FOR SYSTEM NON OPERATION TEST

# INJECTION WELL WEEKLY MONITORING JUNE 21, 2005

			T T	T T	T			T T	<u> </u>	T	T	T	T	7
DOWNTIME** REASON DOWN	**	**	* * *	***	***	*	***	***	* *	* * *	* * *	***	*	
DOWNTIME**	10080	10080	10080	10080	10080	10080	10080	10080	10080	10080	10080	10080	10080	
AVE. GPM PRESSURE	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	
AVE. GPM	0	0	0	0	0	0	0	0	0	0	0	0	0	
WEEK'S TOTAL	0	0	0	0	0	0	0	0	0	0	0	0	0	
GALLONS TO DATE	375,995,000	398,161,000	219,020,000	2,939,341,000	51,882,000	25,403,000	5,295,934,000	2,526,554,000	3,094,952,000	3,244,050,000	2,107,248,000	1,435,459,000	936,119,000	
GPM *LEVEL		203.88	176.72	161.14	138.87	127.20	115.76	123.76	123.34	134.65	161.28		208.86	
GPM	0	0	0	0	0	0	0	0	0	0	0	0	0	
TIME	12:00	14:03	13:56	13:49	13:43	13:36	13:30	13:24	13:17	13:11	12:26	12:22	12:15	(C)
WELL	-	1-2	1-3	1-4	1-5	9-1	L-7	8-1	6-1	1-10	-	1-12	1-13	OF OF LEGIC *

<sup>\*</sup> DEPTH TO WATER (BTC)

<sup>\*\*</sup>DOWNTIME IN MINUTES

<sup>\*\*\*</sup> WELL OFFLINE FOR SYSTEM NON OPERATION TEST

<sup>(1)</sup> POWER FLUCTUATION

<sup>(2)</sup> PREVENTATIVE MAINTENANCE(3) CORRECTIVE MAINTENANCE

# INJECTION WELL WEEKLY MONITORING JUNE 28, 2005

												_	_	-
AVE. GPM PRESSURE DOWNTIME** REASON DOWN	***	**	**	***	***	***	* *	* * *	* *	***	* *	* *	* * *	
DOWNTIME**	10080	10080	10080	10080	10080	10080	10080	10080	10080	10080	10080	10080	10080	4 minutes and the second secon
PRESSURE	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	
AVE. GPM	0	0	0	0	0	0	0	0	0	0	0	0	0	
WEEK'S TOTAL	0	0	0	0	0	0	0	0	0	0	0	0	0	(4) DOWNER TITLE TO THE PROPERTY OF THE PROPER
GPM *LEVEL GALLONS TO DATE	375,995,000	398,161,000	219,020,000	2,939,341,000	51,882,000	25,403,000	5,295,934,000	2,526,554,000	3,094,952,000	3,244,050,000	2,107,248,000	1,435,459,000	936,119,000	
*LEVEL		203.86	176.72	161.12	138.86	127.17	115.74	123.74	123.36	134.66	161.29		208.85	
GPM	0	0	0	0	0	0	0	0	0	0	0	0	0	
TIME	11:59	14:04	13:57	13:50	13:44	13:39	13:13	13:19	13:26	13:31	12:35	12:27	12:21	(BTC)
WELL	<u>.</u>	1-2	1-3	1-4	1-5	9-1	1-7	8-1	6-1	1-10	-	1-12	1-13	* DEPTH TO WATER (BTC)

DEPTH TO WATER (BTC)

<sup>\*\*</sup>DOWNTIME IN MINUTES

<sup>\*\*\*</sup> WELL OFFLINE FOR SYSTEM NON OPERATION TEST

<sup>(1)</sup> POWER FLUCTUATION

<sup>(2)</sup> PREVENTATIVE MAINTENANCE(3) CORRECTIVE MAINTENANCE

### **APPENDIX D**

### PUMP P-1 REMOVAL PHOTOGRAPHS





03 May 2005. Nickerson Co. personnel removing P-1 pump.



03 May 2005. Nickerson Co. personnel removing P-1 pump.

SWMU 2
TOOELE ARMY DEPOT
TOOELE, UTAH
PULLING P-1 PHOTOGRAPHS





03 May 2005. Impeller just after removal from housing.



03 May 2005. Close-up of condition of impeller.

SWMU 2
TOOELE ARMY DEPOT
TOOELE, UTAH
PULLING P-1 PHOTOGRAPHS



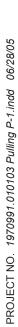


 $03\ May\ 2005.$  Condition of inside of pump housing.



03 May 2005. View of discharge side of the pump housing.

SWMU 2
TOOELE ARMY DEPOT
TOOELE, UTAH
PULLING P-1 PHOTOGRAPHS

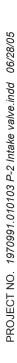




03 May 2005. Pump loaded onto the trailer for transport to Nickerson Co. facilities.

### **APPENDIX E**

### PUMP P-2 INTAKE VALVE REPAIR PHOTOGRAPHS

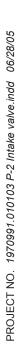




05 May 2005. Veolia personnel initiating the removal of P-2 valve.



05 May 2005. Crane assembly used to remove P-2 valve.





05 May 2005. Removed P-2 valve.



05 May 2005. Removed P-2 valve.





05 May 2005. Replacement of P-2 valve.